JVC

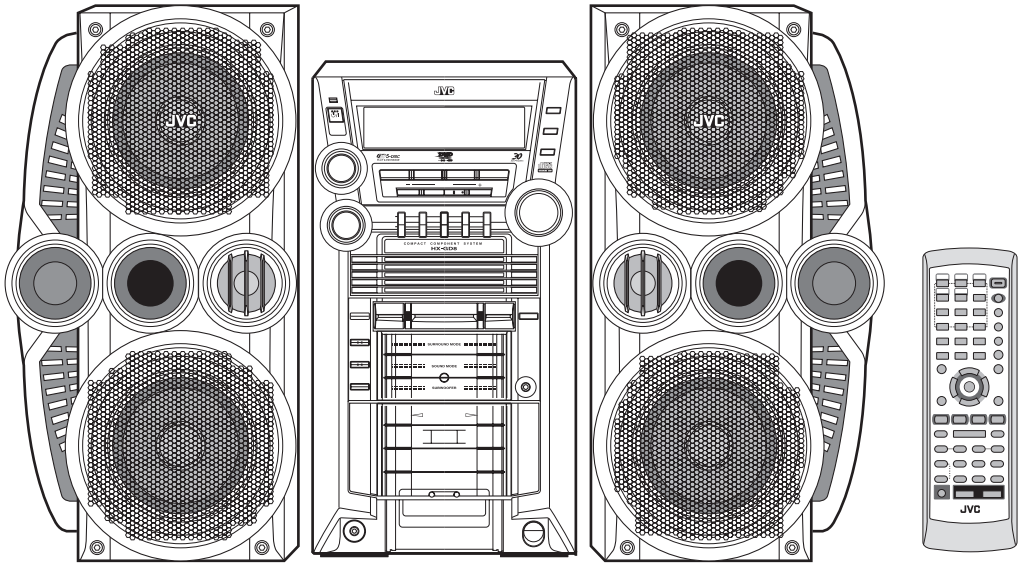
SERVICE MANUAL

COMPACT COMPONENT SYSTEM

HX-GD8

Area suffix

J ---------- U.S.A.
C ---------- Canada



SP-HXGD8 CA-HXGD8 SP-HXGD8

TABLE OF CONTENTS

1 PRECAUTION 1-3
2 SPECIFIC SERVICE INSTRUCTIONS 1-6
3 DISASSEMBLY 1-7
4 ADJUSTMENT 1-39
5 TROUBLESHOOTING 1-55

COPYRIGHT © 2004 VICTOR COMPANY OF JAPAN, LIMITED

No.MB188
2004/4

SPECIFICATION

Amplifier section CA-HXGD8			
Output Power	SUBWOOFERS		195 W per channel, min. RMS, driven into 6 Ω at 63 Hz with no more than 10 % total harmonic distortion.
	MAIN SPEAKERS		80 W per channel, min. RMS, driven into 6 Ω at 1 kHz with no more than 10 % total harmonic distortion.
	Audio input sensitivity/impedance (Measured at 1 kHz, with tape recording signal 300 mV)		AUX:300 mV/47 kΩ
Digital output	OPTICAL DIGITAL OUTPUT		-21 dBm to -15 dBm (660 nm ± 30 nm)
VIDEO OUT	Color system		NTSC
	VIDEO (composite)		1 V(p-p)/75 Ω
	S-VIDEO		Y (luminance):1 V(p-p)/75 Ω
			C (chrominance, burst):0.286 V(p-p)/75 Ω
	COMPONENT (interlace/ progressive)		(Y):1 V(p-p)/75 Ω
			(P B/PR):0.7 V(p-p)/75 Ω
	Speaker Terminals	MAIN SPEAKERS	6 Ω - 16 Ω ()
		SUBWOOFERS	6 Ω - 16 Ω ()
Others			AV COMPU LINK × 2 (Ø 3.5)
Tuner section	FM tuning range		87.5 MHz - 108.0 MHz
	AM tuning range		530 kHz - 1 710 kHz
Disc player section	Playable disc		DVD VIDEO/DVD AUDIO CD/VCD/SVCD CD-R/CD-RW (recorded in Audio CD/ Video CD/ Super Video CD/ MP3/ WMA/ JPEG format) DVD-R/DVD-RW (recorded in video format)
	Dynamic range		90 dB
	Horizontal resolution		500 lines
	Wow and flutter		Immeasurable
Cassette deck section	Frequency response	Normal (type I)	50 Hz - 14 000 Hz
		Wow and flutter	0.15 % (WRMS)
General	Power requirement		AC 120 V , 60 Hz
	Power consumption		265 W/ 325 VA (at operation)
			30 W (on standby)
	Dimensions (approx.) (W/H/D)		205 mm × 370 mm × 432 mm (8 1/8 in. × 14 5/8 in. × 17 1/16 in.)
	Mass (approx.)		11 kg (24.3 lbs)
Speaker section SP-HXGD8			
Type			3-Way 4-Speaker Bass-Reflex Type
Speakers		Subwoofer	20 cm (7 7/8 in.)cone × 1
		Woofer	13.5 cm (5 3/8in.) cone × 2
		Tweeter	5 cm (2 in.) cone × 1
Power handling capacity		Subwoofer	195 W
		Main speaker	80 W
Impedance		Subwoofer	6 Ω
		Main speaker	6 Ω
Frequency range		Subwoofer	30 Hz - 970 Hz
		Main speaker	75 Hz 25 000 Hz
Sound pressure level		Subwoofer	83 dB/W·m
		Main speaker	88 dB/W·m
Dimensions (approx.) (W/H/D)			240 mm × 457 mm × 407 mm (9 1/2 in. × 18 in. × 16 1/16 in.)
Mass (approx.)			10 kg (22.1 lbs) each

Design and specifications are subject to change without notice.

SECTION 1
PRECAUTION

1.1 Safety Precautions

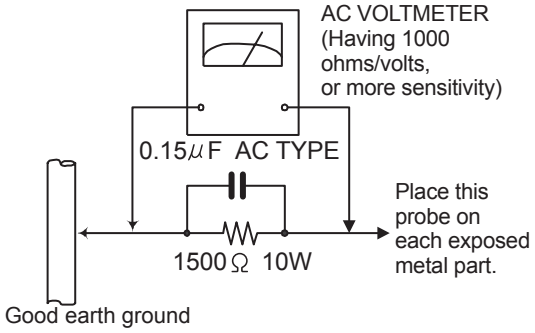
(1) This design of this product contains special hardware and many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Services should be performed by qualified personnel only.

(2) Alterations of the design or circuitry of the product should not be made. Any design alterations of the product should not be made. Any design alterations or additions will void the manufacturers warranty and will further relieve the manufacture of responsibility for personal injury or property damage resulting therefrom.

(3) Many electrical and mechanical parts in the products have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the Parts List of Service Manual. Electrical components having such features are identified by shading on the schematics and by (⚠) on the Parts List in the Service Manual. The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement parts shown in the Parts List of Service Manual may create shock, fire, or other hazards.

(4) The leads in the products are routed and dressed with ties, clamps, tubings, barriers and the like to be separated from live parts, high temperature parts, moving parts and/or sharp edges for the prevention of electric shock and fire hazard. When service is required, the original lead routing and dress should be observed, and it should be confirmed that they have been returned to normal, after reassembling.

(5) Leakage shock hazard testing
After reassembling the product, always perform an isolation check on the exposed metal parts of the product (antenna terminals, knobs, metal cabinet, screw heads, headphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.Do not use a line isolation transformer during this check.
- Plug the AC line cord directly into the AC outlet. Using a "Leakage Current Tester", measure the leakage current from each exposed metal parts of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground. Any leakage current must not exceed 0.5mA AC (r.m.s.).
- Alternate check method
Plug the AC line cord directly into the AC outlet. Use an AC voltmeter having, 1,000Ω per volt or more sensitivity in the following manner. Connect a 1,500Ω 10W resistor paralleled by a 0.15μF AC-type capacitor between an exposed metal part and a known good earth ground.
Measure the AC voltage across the resistor with the AC voltmeter.
Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and measure the AC voltage across the resistor. Now, reverse the plug in the AC outlet and repeat each measurement. Voltage measured any must not exceed 0.75 V AC (r.m.s.). This corresponds to 0.5 mA AC (r.m.s.).



1.2 Warning

(1) This equipment has been designed and manufactured to meet international safety standards.
(2) It is the legal responsibility of the repairer to ensure that these safety standards are maintained.
(3) Repairs must be made in accordance with the relevant safety standards.
(4) It is essential that safety critical components are replaced by approved parts.
(5) If mains voltage selector is provided, check setting for local voltage.

1.3 Caution

Burrs formed during molding may be left over on some parts of the chassis.
Therefore, pay attention to such burrs in the case of preforming repair of this system.

1.4 Critical parts for safety

In regard with component parts appearing on the silk-screen printed side (parts side) of the PWB diagrams, the parts that are printed over with black such as the resistor (▬), diode (▮) and ICP (●) or identified by the " ⚠ " mark nearby are critical for safety. When replacing them, be sure to use the parts of the same type and rating as specified by the manufacturer.
(This regulation dose not Except the J and C version)

1.5 Preventing static electricity

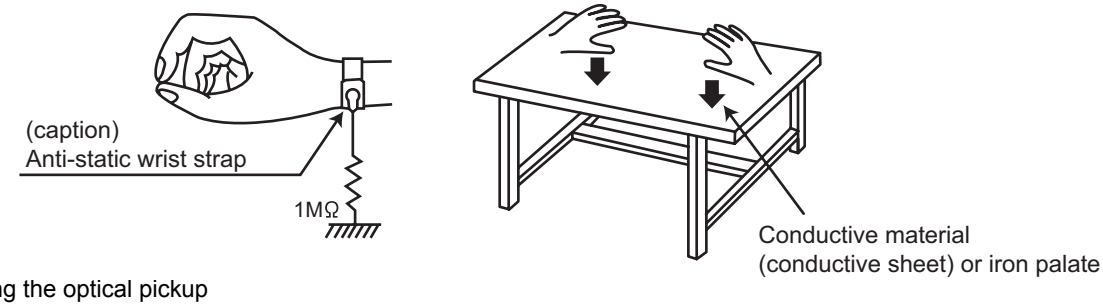
Electrostatic discharge (ESD), which occurs when static electricity stored in the body, fabric, etc. is discharged, can destroy the laser diode in the traverse unit (optical pickup). Take care to prevent this when performing repairs.

1.5.1 Grounding to prevent damage by static electricity

Static electricity in the work area can destroy the optical pickup (laser diode) in devices such as laser products.
Be careful to use proper grounding in the area where repairs are being performed.

(1) Ground the workbench
Ground the workbench by laying conductive material (such as a conductive sheet) or an iron plate over it before placing the traverse unit (optical pickup) on it.

(2) Ground yourself
Use an anti-static wrist strap to release any static electricity built up in your body.



(3) Handling the optical pickup
- In order to maintain quality during transport and before installation, both sides of the laser diode on the replacement optical pickup are shorted. After replacement, return the shorted parts to their original condition. (Refer to the text.)
- Do not use a tester to check the condition of the laser diode in the optical pickup. The tester's internal power source can easily destroy the laser diode.

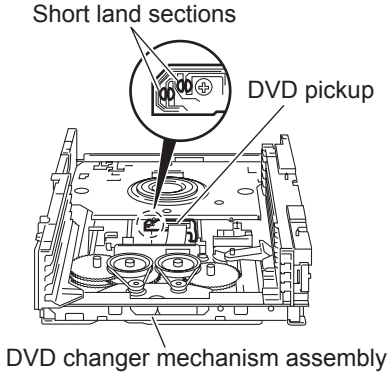
1.6 Handling the traverse unit (optical pickup)

(1) Do not subject the traverse unit (optical pickup) to strong shocks, as it is a sensitive, complex unit.
(2) Cut off the shorted part of the flexible cable using nippers, etc. after replacing the optical pickup. For specific details, refer to the replacement procedure in the text. Remove the anti-static pin when replacing the traverse unit. Be careful not to take too long a time when attaching it to the connector.
(3) Handle the flexible cable carefully as it may break when subjected to strong force.
(4) I t is not possible to adjust the semi-fixed resistor that adjusts the laser power. Do not turn it.

1.7 Attention when traverse unit is decomposed

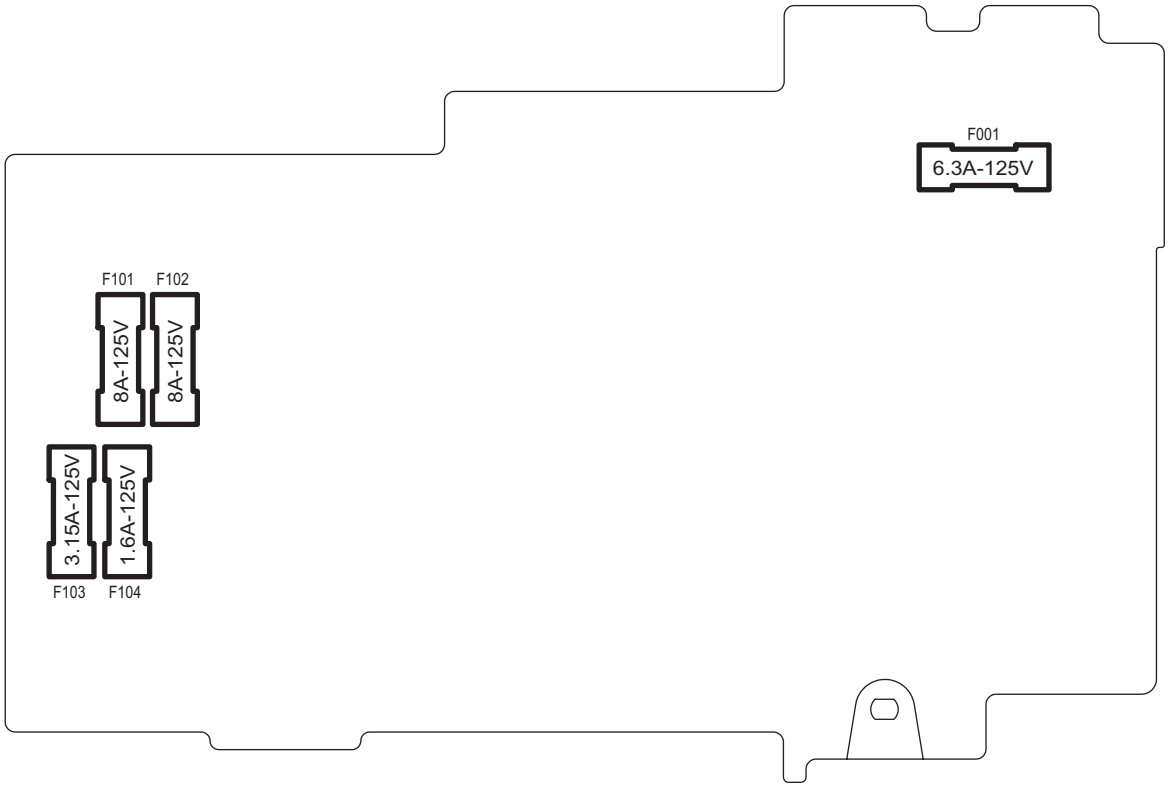
***Please refer to "Disassembly method" in the text for the pickup unit.**

- Apply solder to the short land sections before the flexible wire is disconnected from the connecto on the servo board. (If the flexible wire is disconnected without applying solder, the pickup may be destroyed by static electricity.)
- In the assembly, be sure to remove solder from the short land sections after connecting the flexible wire.

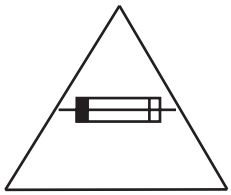


1.8 Importance administering point on the safety

Primary board (Forward side)



For USA and Canada / pour Etats - Unis d' Amérique et Canada



Caution: For continued protection against risk of fire, replace only with same type 6.3 A/125 V for F001, 8 A/125 V for F101 and F102, 3.15 A/125 V for F103, 1.6 A/125 V for F104.
This symbol specifies type of fast operating fuse.

Précaution: Pour eviter risques de feux, remplacez le fusible de sureté de F001 comme le meme type que 6,3 A/125 V, 8 A/125 V pour F101 et F102, et 3,15 A/125 V pour F103, et 1,6 A/125V pour F104.
Ce sont des fusibles sûretes qui functionnes rapide.

SECTION 2
SPECIFIC SERVICE INSTRUCTIONS

This service manual does not describe ADJUSTMENT.

SECTION 3
DISASSEMBLY

3.1 Main body section

3.1.1 Removing the metal cover (See Figs.1 to 3)

(1) From the back side of the main body, remove the six screws **A** attaching the metal cover. (See Fig.1.)
(2) From the both sides of the main body, remove the two screws **B** attaching the metal cover. (See Figs.2 and 3.)
(3) Remove the metal cover from the main body while lifting the rear section of the metal cover in the direction of the arrow. (See Figs.2 and 3.)

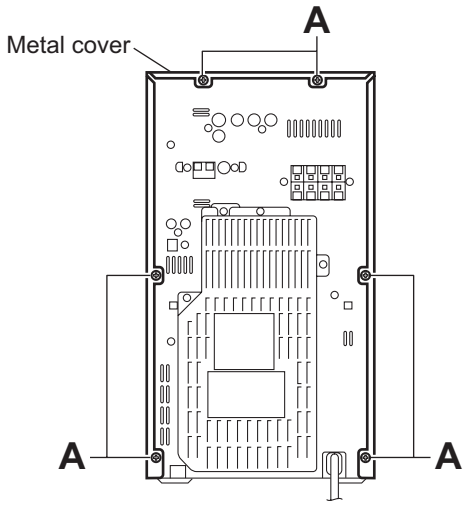


Fig.1

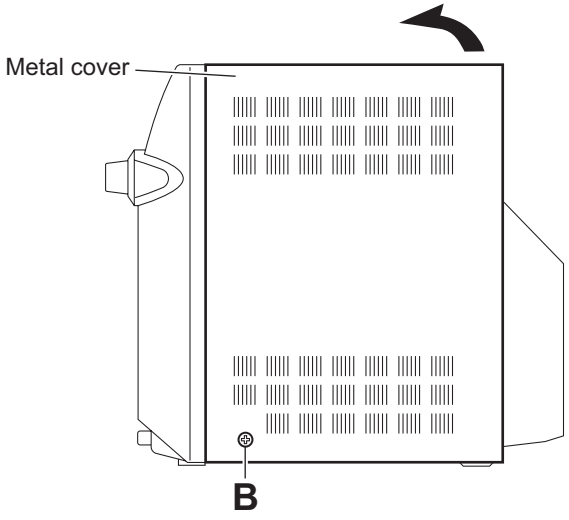


Fig.2

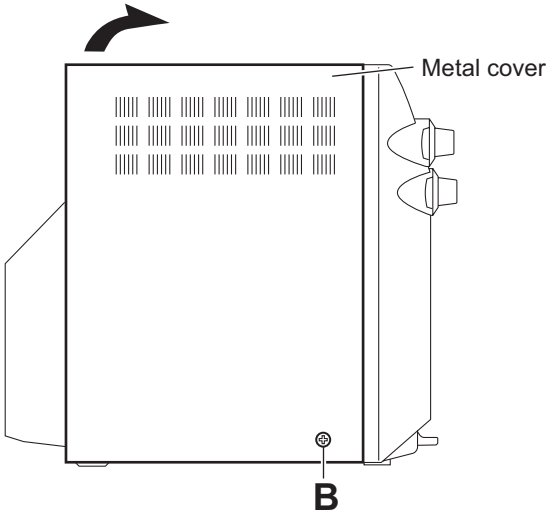


Fig.3

3.1.2 Removing the front panel assembly (See Figs.4 to 7)

- Prior to performing the following procedures, remove the metal cover.

(1) From the right side of the main body, disconnect the card wires from the connectors (CN43, CN44, CN802, CN803) on the main board. (See Fig.4.)

(2) Disconnect the earth wire from the chassis base. (See Fig.4.)

(3) From the top side of the main body, disconnect the parallel wires from the connectors (CN201, CN205) on the bridge board. (See Fig.5.)

Reference:

When reassembling, pass the parallel wire through the hole **a** on the plastic chassis before connecting the parallel wire to the connector CN201 on the bridge board. (See Fig.5.)

(4) From the left side of the main body, remove the tie band bundling the wires. (See Fig.16.)

Reference:

After reassembling, bundle the wires with the new tie band as before. (See Fig.16.)

(5) Disconnect the earth wire from the chassis base. (See Fig.6.)

(6) From the both sides of the main body, remove the two screws **C** attaching the front panel assembly. (See Figs.4 and 6.)

(7) From the bottom side of the main body, remove the three screws **D** attaching the front panel assembly. (See Fig.7.)

(8) Release the joints **b** of the front panel assembly from the chassis base and remove the front panel assembly in the direction of the arrow. (See Figs.4, 6 and 7.)

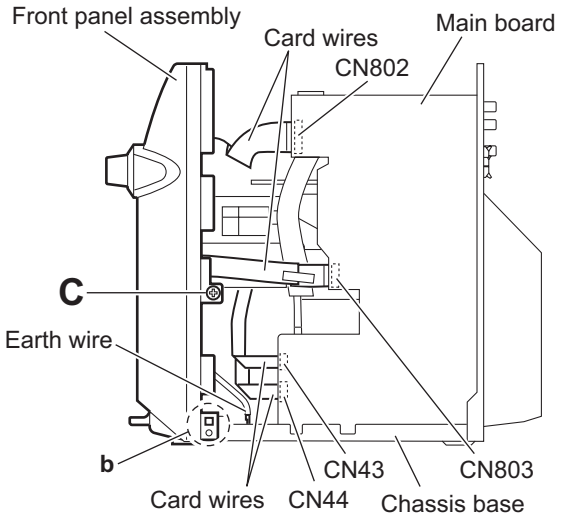


Fig.4

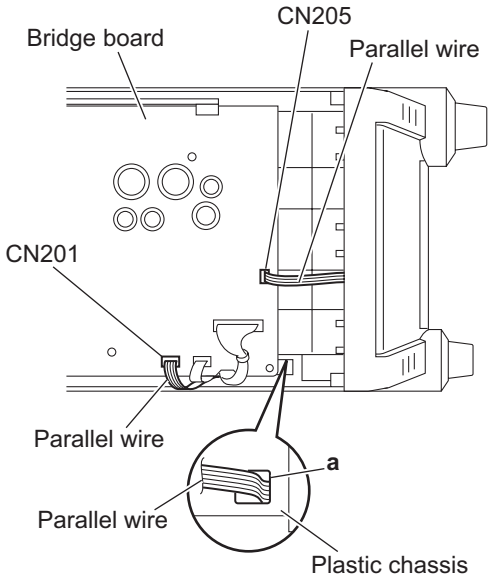


Fig.5

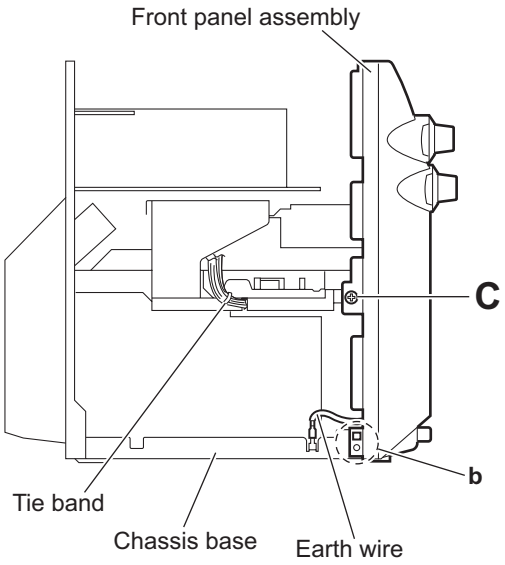


Fig.6

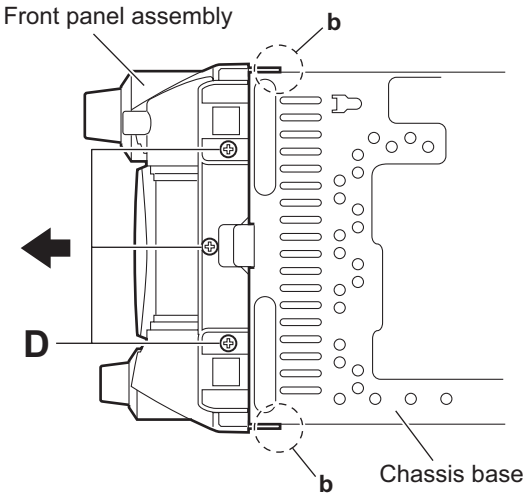


Fig.7

3.1.3 Removing the tuner
(See Figs.8 and 9)

- Prior to performing the following procedures, remove the metal cover.
  (1) From the right side of the main body, disconnect the card wire from the connector CN560 on the main board. (See Fig.8.)
  (2) From the back side of the main body, remove the two screws **E** attaching the tuner to the rear panel. (See Fig.9.)

3.1.4 Removing the video board
(See Figs.8 and 9)

- Prior to performing the following procedures, remove the metal cover.
  (1) From the right side of the main body, disconnect the card wire from the connector CN502 on the main board. (See Fig.8.)
  (2) From the back side of the main body, remove the two screws **F** attaching the video board to the rear panel. (See Fig.9.)

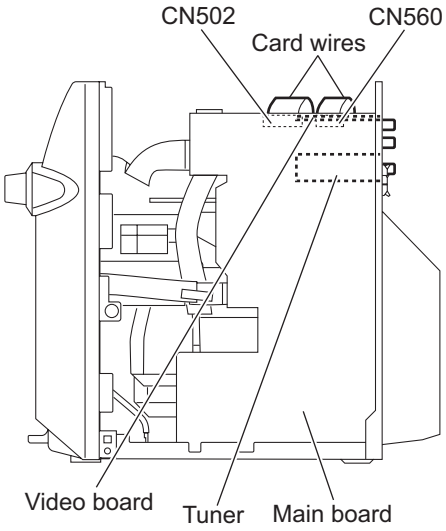


Fig.8

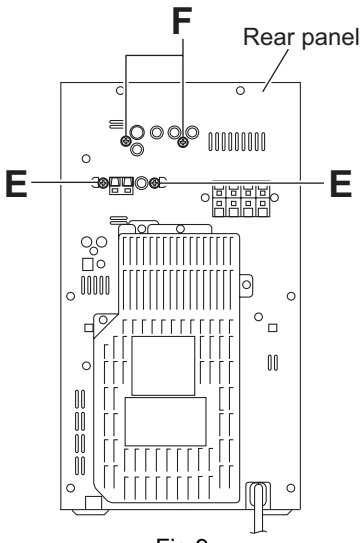


Fig.9

3.1.5 Removing the rear panel (See Figs.10 to 12)

- Prior to performing the following procedures, remove the metal cover.
  (1) From the top side of the main body, remove the tie band bundling the wires. (See Fig.10.)

  Reference:
  After reassembling, bundle the wires with the new tie band as before. (See Fig.10.)
  (2) Disconnect the wire from the connector CN202 on the bridge board. (See Fig.10.)
  (3) From the back side of the main body, remove the two screws **G** and screw **H** attaching the rear cover. (See Fig.11.)
  (4) Release the sections **c** and remove the rear cover. (See Fig.11.)
  (5) Remove the sixteen screws **J** attaching the rear panel. (See Fig.12.)
  (6) From the both sides of the main body, release the joints **d** attaching the rear panel to the chassis base and remove the rear panel with the fan. (See Fig.12.)

3.1.6 Removing the fan (See Figs.10 to 12)

- Prior to performing the following procedures, remove the metal cover.
  (1) From the top side of the main body, remove the tie band bundling the wires. (See Fig.10.)

  Reference:
  After reassembling, bundle the wires with the new tie band as before. (See Fig.10.)
  (2) Disconnect the wire from the connector CN202 on the bridge board. (See Fig.10.)
  (3) From the back side of the main body, remove the two screws **G** and screw **H** attaching the rear cover. (See Fig.11.)
  (4) Remove the two screws **K** attaching the fan. (See Fig.12.)
  (5) Take out the fan from the main body.

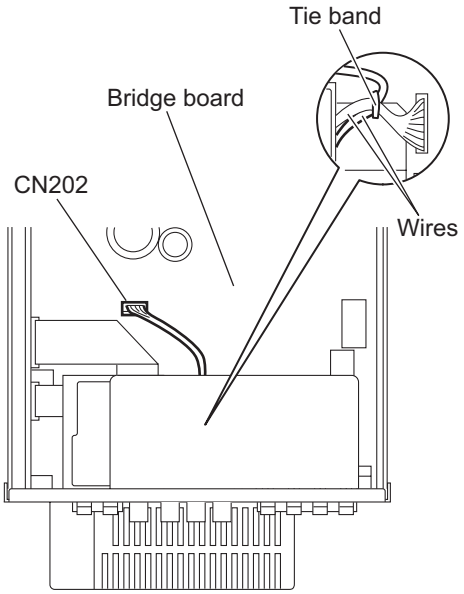


Fig.10

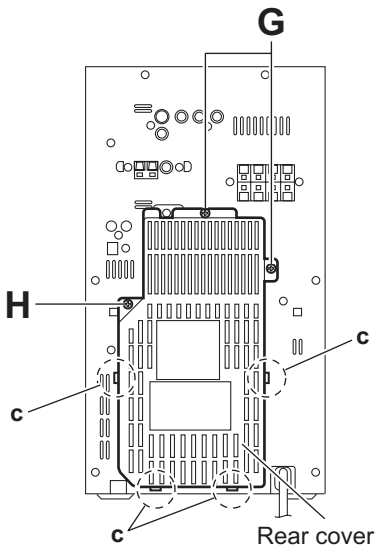


Fig.11

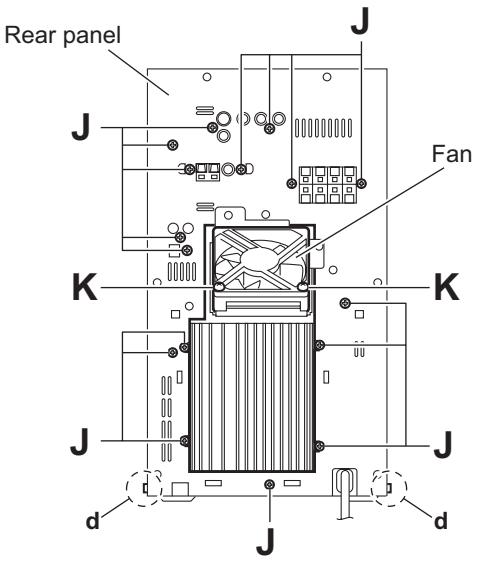


Fig.12

3.1.7 Removing the main board (See Figs.13 and 14)

- Prior to performing the following procedures, remove the metal cover, tuner, video board and rear panel.
  (1) From the right side of the main body, disconnect the card wires from the connectors (CN43, CN44, CN110, CN111, CN802, CN803) on the main board. (See Fig.13.)
  (2) Disconnect the parallel wires from the connector CN715 on the forward side of the main board. (See Fig.13.)
  (3) Remove the two screws **L** attaching the main board. (See Fig.14.)
  (4) Disconnect the connector CN217 on the main board toward this side and disconnect the connector CN501 on the main board in the direction of the arrow. (See Fig.14.)

Reference:

- When attaching the main board, insert the sections **e** of the bridge board in the hole of the main board. (See Fig.14.)
- Insert the section **f** of the main board in the hole of the chassis base before attaching the screws **L**.

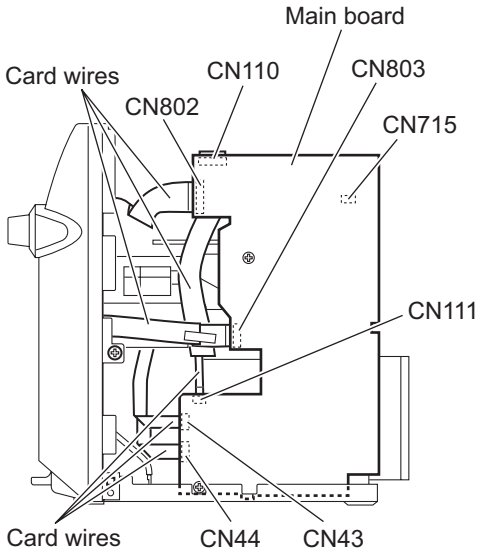


Fig.13

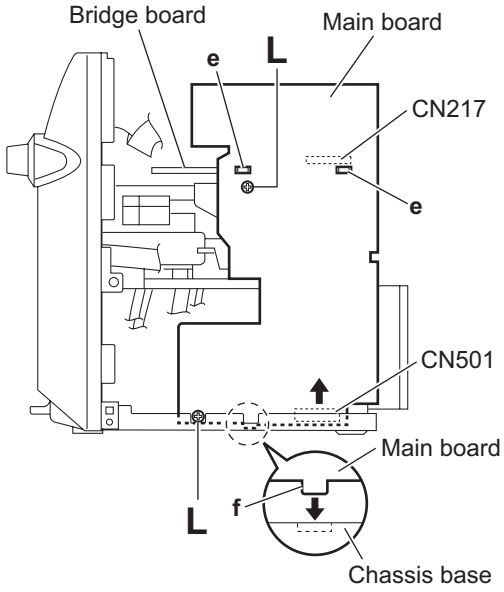


Fig.14

3.1.8 Removing the main amplifier board/subwoofer amplifier boards (See Figs.15 to 17)

- Prior to performing the following procedures, remove the metal cover, tuner, video board, rear panel and main board.
  (1) From the top side of the main body, disconnect the wires from the connector (CN206, CN208) on the bridge board. (See Fig.15.)
  (2) From the back side of the main body, remove the tie band bundling the wires. (See Fig.16.)

  Reference:
  After reassembling, bundle the wires with the new tie band as before. (See Fig.16.)
  (3) Disconnect the connectors (CN600, CN700) on the main amplifier/subwoofer amplifier boards from the connection board in the direction of the arrow. (See Fig.16.)
  (4) Remove the two screws **M** and screw **N** attaching the main amplifier board. (See Fig.17.)
  (5) Removing the two screws **P** and screw **Q** attaching the subwoofer amplifier board. (See Fig.17.)

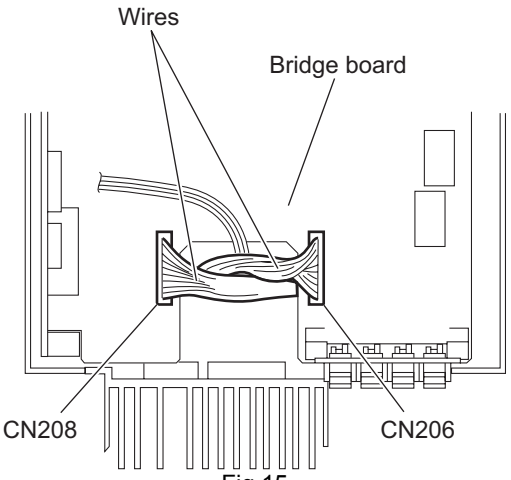


Fig.15

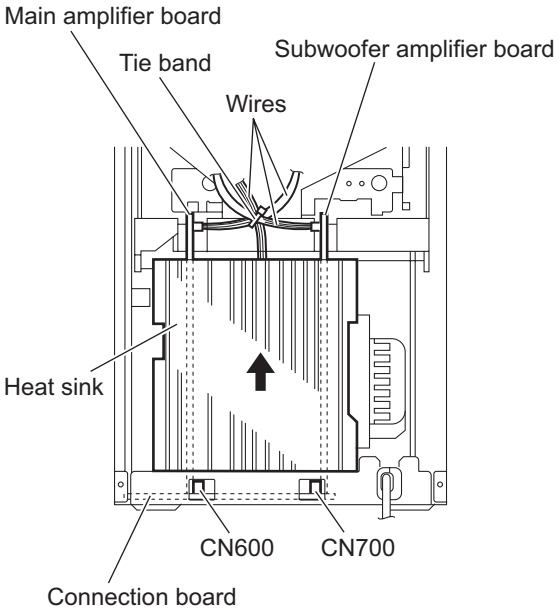


Fig.16

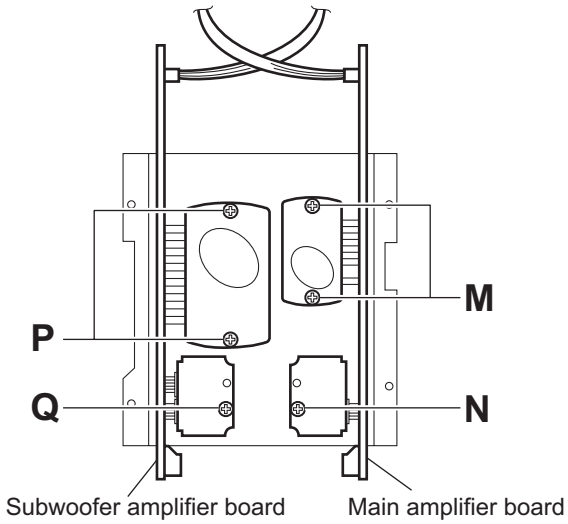


Fig.17

3.1.9 Removing the connection board (See Fig.18.)

- Prior to performing the following procedure, remove the metal cover, tuner, video board, rear panel, main board and main amplifier/subwoofer amplifier boards.
  (1) From the top side of the main body, remove the two screws **R** attaching the connection board on the chassis base.

Reference:

When reassembling, attach the connection board to the section **g** and align the projection **h** of the chassis base to the hole of the connection board.

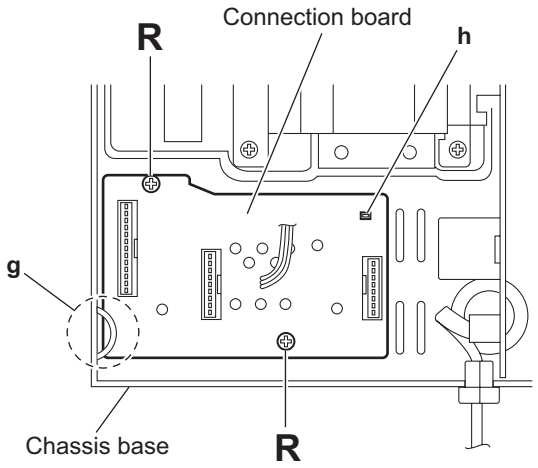


Fig.18

3.1.10 Removing the bridge board (See Figs.19 and 20)

- Prior to performing the following procedures, remove the metal cover, tuner, video board, rear panel and main board.
  (1) From the top side of the main body, release the wire holder bundling the wire. (See Fig.19.)
  (2) Disconnect the wires from the connectors (CN206, CN208, CN214) on the bridge board. (See Fig.19.)

  Reference:

  After connecting the wire to the connector CN214, fix the wire with the wire holder. (See Fig.19.)
  (3) Disconnect the parallel wires from the connectors (CN201, CN205, CN213) on the bridge board. (See Fig.19.)
  (4) Release the wire holder holding the card wire. (See Fig.19.)
  (5) Remove the spacer fixing the wire on the bridge board. (See Fig.19.)
  (6) Remove the two screws **S** attaching the bridge board on the 5DVD changer mechanism assembly. (See Fig.20.)
  (7) Bend the claw **i** in the direction of the arrow and remove the bridge board in an upward direction. (See Fig.20.)

Reference:

- When attaching the bridge board, align the projections (**j**, **k**) in the hole of the bridge board. (See Fig.20.)
- When reassembling, pass the wires through the sections (**m**, **n**) of the plastic chassis. (See Fig.19.)

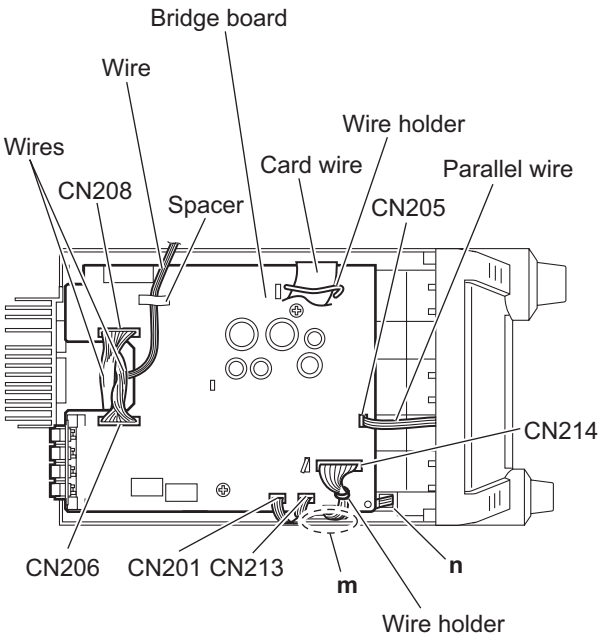


Fig.19

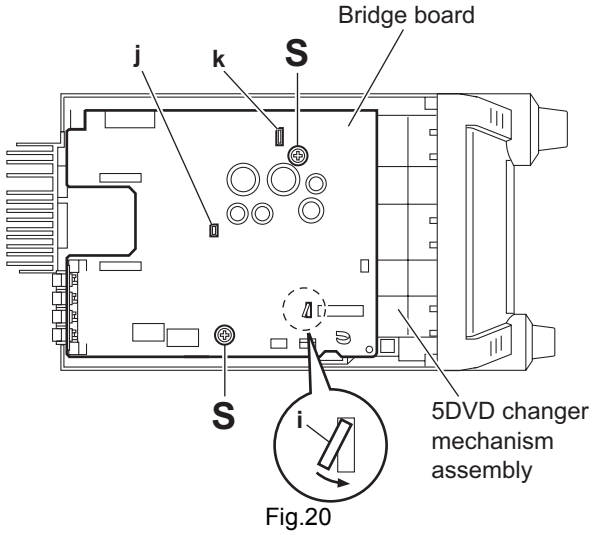


Fig.20

3.1.11 Removing the 5DVD changer mechanism assembly (See Figs.21 to 23)

- Prior to performing the following procedures, remove the metal cover, tuner, video board, rear panel, main board and bridge board.
  (1) From the both sides of the main body, remove the two screws **T** attaching the 5DVD changer mechanism assembly to the front panel assembly. (See Figs.21 and 22.)
  (2) From the left side of the main body, remove the tie band bundling the wire and parallel wires. (See Fig.22.)

  Reference:
  After reassembling, bundle the wire and parallel wires with the new tie band as before. (See Fig.22.)
  (3) Take out the 5DVD changer mechanism assembly from the main body.

  Reference:
  When attaching the 5CD changer mechanism assembly, pass the wires through the sections (**m**, **n**) of the plastic chassis. (See Fig.22.)
  (4) From the both and top sides of the 5DVD changer mechanism assembly, remove the two screws **U** and screw **U'** attaching the main chassis. (See Fig.23.)

  Reference:
  - Align the projections **s** of the plastic chassis to the holes of the main chassis before attaching the screw **U'**. (See Fig.23.)
  - When attaching the screw **U'**, attach the earth wire with it. (See Fig.23.)

  (5) Take out the main chassis.
  (6) From the top side of the 5DVD changer mechanism assembly, remove the three screws **V** and screw **V'** attaching the 5DVD changer mechanism assembly on the plastic chassis.

Reference:
- When reassembling, align the projections (**p**, **q**, **r**) of the plastic chassis to the holes of the 5DVD changer mechanism assembly before attaching the screws **V** and **V'**. (See Fig.23.)
- When attaching the screw **V'**, attach the earth wire with it. (See Fig.23.)

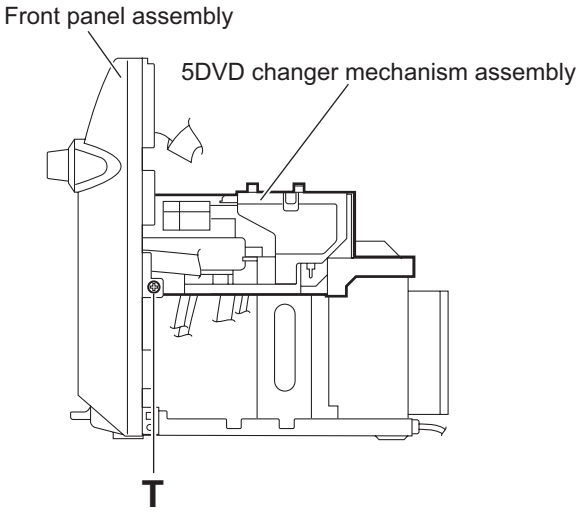


Fig.21

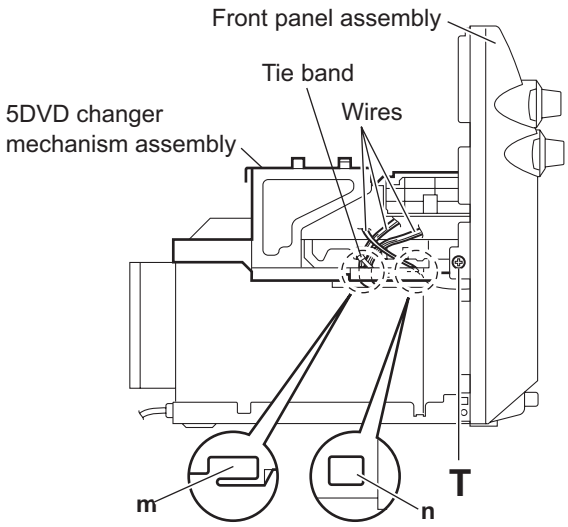


Fig.22

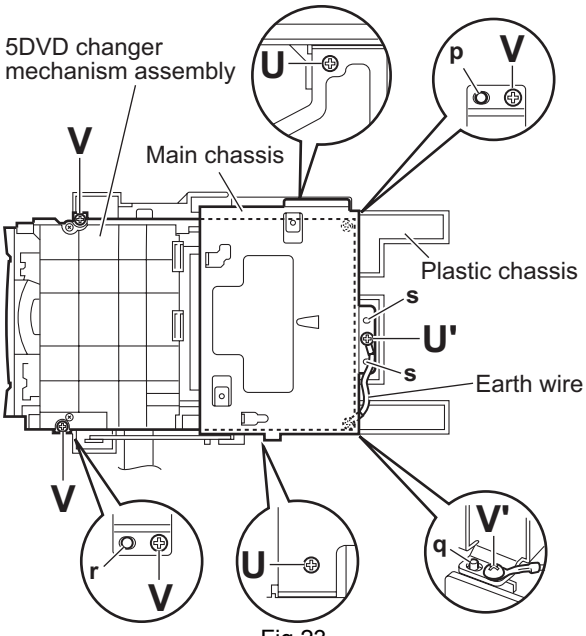


Fig.23

3.1.12 Removing the primary board
(See Figs.19, 21, 22, 24 and 25)

- Prior to performing the following procedures, remove the metal cover, tuner, video board, rear panel and main board.
  (1) From the top side of the main body, release the wire holder bundling the wire. (See Fig.19.)
  (2) Disconnect the wires from the connectors (CN206, CN208, CN214) on the bridge board. (See Fig.19.)

  Reference:
  After connecting the wire to the connector CN214, fix the wire with the wire holder. (See Fig.19.)
  (3) Disconnect the parallel wires from the connectors (CN201, CN205, CN213) on the bridge board. (See Fig.19.)
  (4) Release the wire holder holding the card wire. (See Fig.19.)
  (5) Remove the spacer fixing the wire on the bridge board. (See Fig.19.)
  (6) From the both sides of the main body, remove the two screws **T** attaching the 5DVD changer mechanism assembly to the front panel assembly. (See Figs.21 and 22.)

  Reference:
  It is not necessary to remove the bridge board from the 5DVD changer mechanism assembly.
  (7) Take out the 5DVD changer mechanism assembly with the bridge board from the main body.

  Reference:
  When attaching the 5DVD changer mechanism assembly, pass the wires through the sections (**m**, **n**) of the 5DVD changer mechanism assembly. (See Fig.22.)
  (8) From the top and left sides of the main body, remove the four screws **W** and screw **X** attaching the primary board on the chassis base. (See Figs.24 and 25.)
  (9) From the forward side of the primary board, disconnect the power cord from the connector CN200. (See Fig.25.)

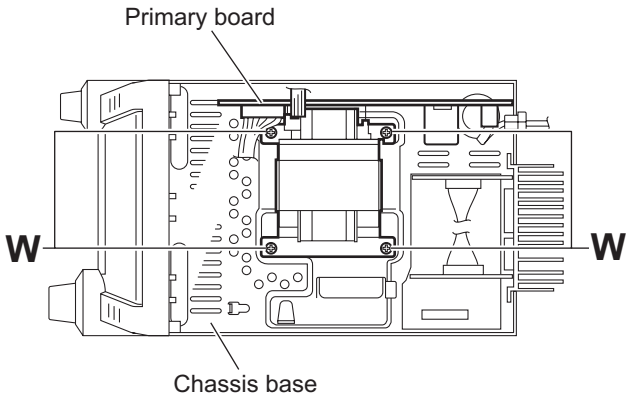


Fig.24

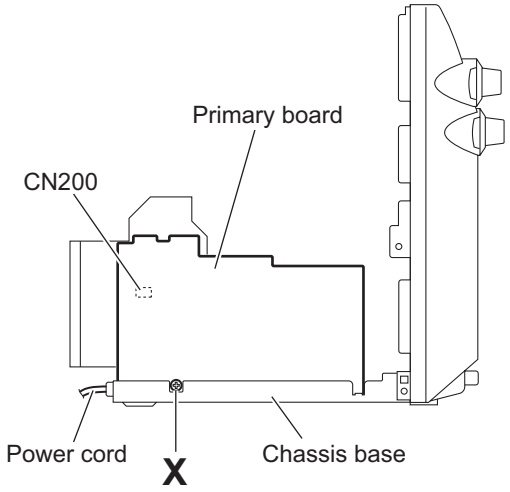


Fig.25

3.1.13 Removing the FL board
(See Fig.26)

- Prior to performing the following procedures, remove the metal cover and front panel assembly.
  (1) From the inside of the front panel assembly, remove the soldered sections (**t**, **u**) on the FL board to remove the parallel wires.
  (2) Disconnect the card wire from the connector CN902 on the FL board.
  (3) Remove the four screws **Y** attaching the FL board.

Reference:
When attaching the FL board, align the projections **v** of the front panel assembly in the holes of the FL board before attaching the screws **Y**.

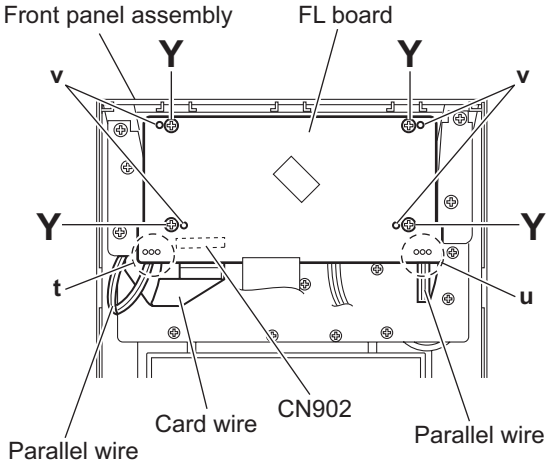


Fig.26

3.1.14 Removing the switch board (See Fig.27)

- Prior to performing the following procedures, remove the metal cover and front panel assembly.
  (1) From the inside of the front panel assembly, remove the three screws **Z** attaching the switch board.
  (2) Take out the switch board and remove the soldered section **w** on the switch board to remove the parallel wire.

Reference:

When attaching the switch board, align the projections **x** in the holes of the switch board before attaching the screws **Z**.

3.1.15 Removing the standby LED board (See Fig.27)

- Prior to performing the following procedures, remove the metal cover and front panel assembly.
  (1) From the inside of the front panel assembly, remove the two screws **AA** attaching the standby LED board.
  (2) Take out the standby LED board and remove the soldered section **y** on the standby LED board to remove the parallel wire.

Reference:

When attaching the standby LED board, align the projections **z** in the holes of the standby LED board before attaching the screws **AA**.

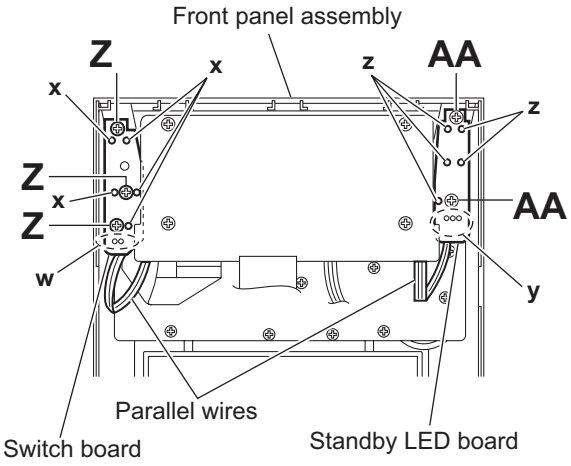


Fig.27

3.1.16 Removing the encoder board (See Figs.26 to 29)

- Prior to performing the following procedures, remove the metal cover and front panel assembly.
  (1) From the outside of the front panel assembly, pull out the knobs toward this side. (See Fig.28.)
  (2) From the inside of the front panel assembly, disconnect the card wire from the connector CN902 on the FL board. (See Fig.26.)
  (3) Remove the four screws **Y**, three screws **Z** and two screws **AA** attaching the each board. (See Figs.26 and 27.)
  (4) Take out the FL board with the switch and standby LED boards.

  Reference:
  It is not necessary to remove the parallel wires.
  (5) Remove the eight screws **AB** attaching the encoder board. (See Fig.29.)

Reference:
When attaching the encoder board, align the projections **aa** of the front panel assembly in the holes of the encoder board before attaching the screws **AB**. (See Fig.29.)

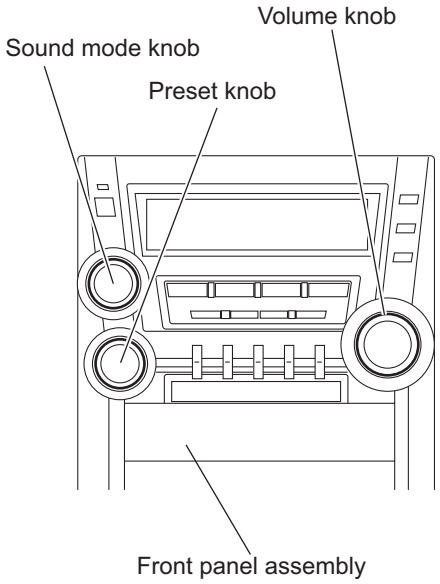


Fig.28

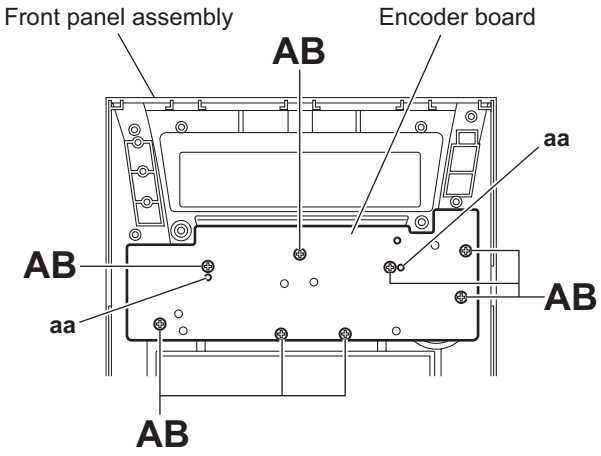


Fig.29

3.1.17 Removing the microphone board (See Fig.30)

- Prior to performing the following procedure, remove the metal cover and front panel assembly.
  From the inside of the front panel assembly, remove the seven screws **AC** and screw **AC'** attaching the microphone board.

Reference:

- When attaching the microphone board, align the projections **ab** of the front panel assembly in the holes of the microphone board before attaching the screws **AC** and **AC'**.
- When attaching the screw **AC'**, attach the wire holder with it.

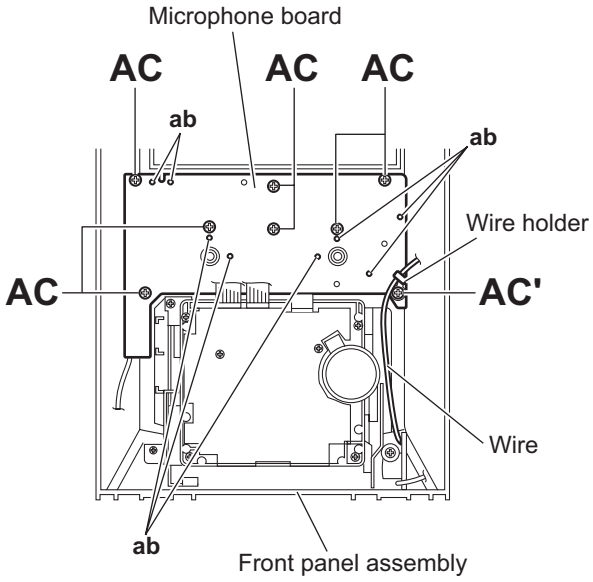


Fig.30

3.1.18 Removing the headphone board (See Fig.31)

- Prior to performing the following procedures, remove the metal cover and front panel assembly.
  (1) From the inside of the front panel assembly, remove the screw **AD** attaching the headphone board.
  (2) Remove the wire holder fixing the wire and take out the headphone board.

Reference:

After attaching the headphone board, fix the wire with the wire holder.

3.1.19 Removing the cassette mechanism assembly (See Fig.31)

- Prior to performing the following procedure, remove the metal cover and front panel assembly.
  (1) From the inside of the front panel assembly, remove the two screws **AE** and two screws **AF** attaching the cassette mechanism assembly.

Reference:

When attaching the cassette mechanism assembly, align the projections (**ac**, **ad**) in the holes of the cassette mechanism assembly.

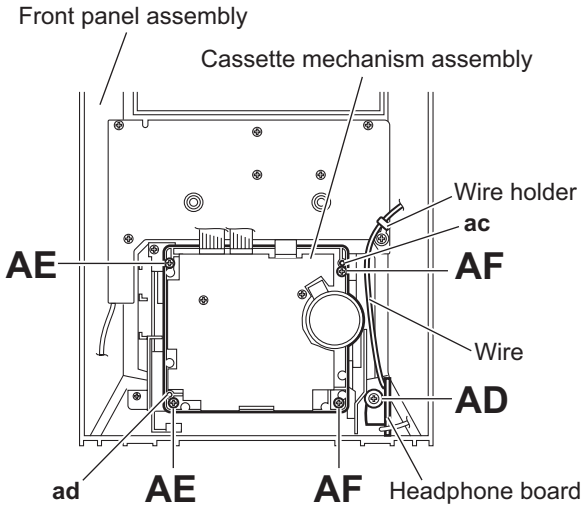


Fig.31

3.2 DVD changer mechanism assembly section

3.2.1 Removing the tray assemblies (See Figs.1 to 5)

(1) From the top side of the main body, remove the two screws **A** from the top cover and release the two joints **a** on the both sides of the DVD changer mechanism assembly. (See Figs.1 and 2.)
(2) Remove the two rods from the top cover and remove the top cover from the lifter assembly. (See Figs.1 and 2.)
(3) Remove the open det. lever on the left side of the DVD changer mechanism assembly. (See Fig.3.)
(4) From the right side of the DVD changer mechanism assembly, draw out the tray assemblies toward the front while pushing the part **b** of the side (R) assembly. (See Figs.4 and 5.)

Note:
The tray can be locked if all tray assemblies are attached.

(5) From the topside of the DVD changer mechanism assembly, move the stopper tabs **c** in the direction of the arrow and release them. Pull out the tray assemblies from the DVD changer mechanism assembly. (See Fig. 5.)

Note:
Remove the tray assembly from top tray 5 in order.

Reference:
When reattaching the tray assembly, or when removing the disc remaining inside, refer to another section"3.2.15 Taking out the disc in the play mode".

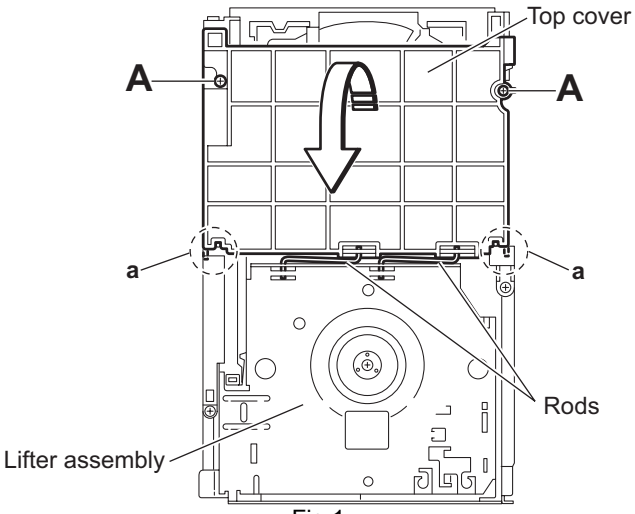


Fig.1

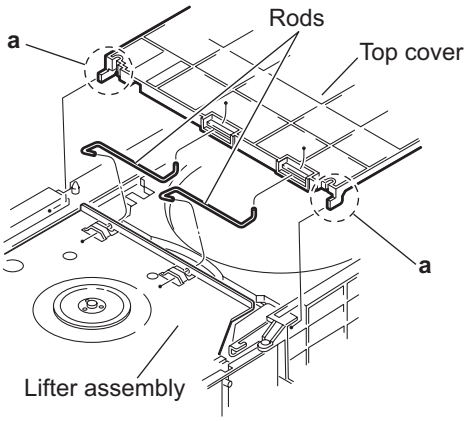


Fig.2

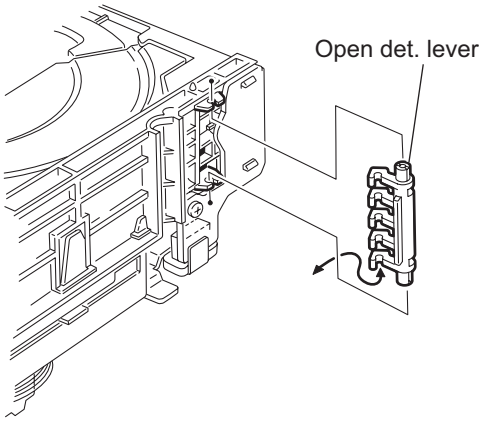


Fig.3

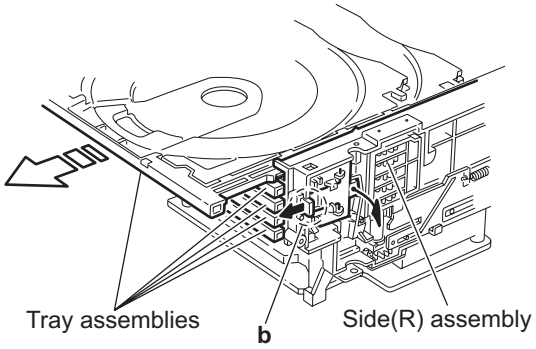


Fig.4

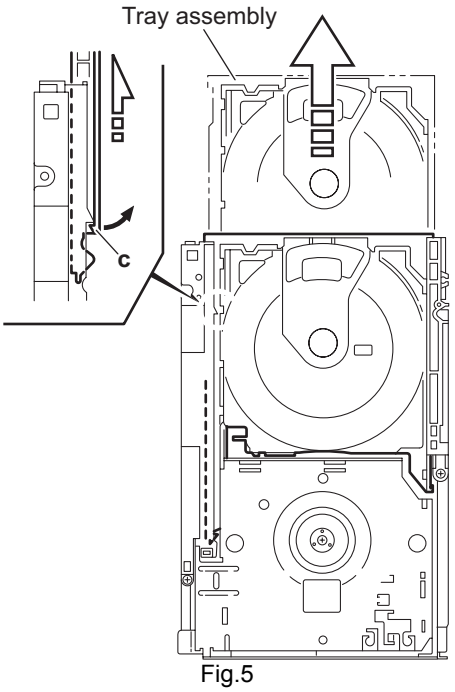


Fig.5

3.2.2 Removing the DVD servo board (See Figs.6 to 8)

Caution:

Solder the short land sections **d** on the DVD pickup before disconnecting the card wire extending from the DVD pickup. If you do not follow this instruction, the DVD pickup may be damaged.

(1) From the topside of the DVD changer mechanism assembly, solder the short land sections **d** on the DVD pick up. (See Fig.6.)

(2) From the bottom side of the DVD changer mechanism assembly, disconnect the card wire from the connectors (CN201, CN451) on the DVD servo board. (See Fig.7.)

(3) Disconnect the wires from the connectors (CN452, CN453) on the DVD servo board. (See Fig.7.)

(4) Remove the screw **B** attaching the earth wire. (See Fig.7.)

Reference:

After attaching the earth wire, fix it with the spacer as before. (See Fig.7.)

(5) Remove the two screws **C** attaching the DVD servo board. (See Fig.7.)

(6) From the reverse side of the DVD servo board, release the lock of the connector CN101 in the direction of the arrow and disconnect the card wire. (See Fig.8.)

Caution:

Unsolder the solders from the short land sections **d** after reassembling. (See Fig.6.)

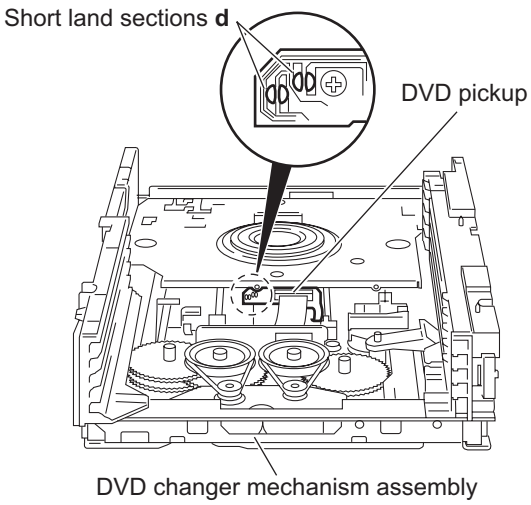


Fig.6

3.2.3 Removing the switch board (See Fig.7)

- Prior to performing the following procedures, remove the DVD servo board.

(1) From the bottom side of the DVD changer mechanism assembly, remove the screw **D** attaching the switch board to the DVD changer mechanism assembly.

(2) Loosen the screw **E** attaching the DVD traverse mechanism assembly and take out the switch board while lifting the section **e** of the DVD traverse mechanism assembly.

(3) Release the wires from the slots **f** of the switch board.

Reference:

When reassembling, pass the wire through the section **g** of the DVD traverse mechanism assembly.

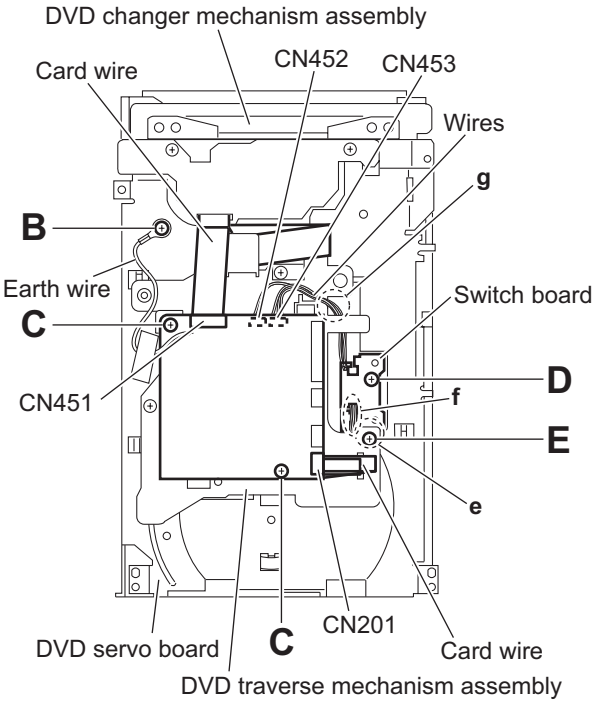


Fig.7

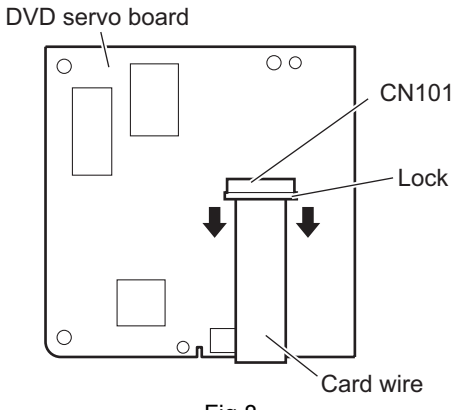


Fig.8

3.2.4 Removing the motor board (See Figs.9 and 10)

(1) From the top side of the DVD changer mechanism assembly, remove the two belts from the motor pulleys. (See Fig.9.)

Note:
Take care not to attach grease on the belt.

(2) Remove the four screws **F** attaching the motors to the loader assembly. (See Fig.9.)

(3) From the bottom side of the DVD changer mechanism assembly, remove the two screws **G**. (See Fig.10.)

(4) Disconnect the connector CN2 on the motor board from the tray switch board and remove the motor board. (See Fig.10.)

(5) Disconnect the card wire from the connector CN1 on the motor board. (See Fig.10.)

Note:
When connecting the card wire, let the card wire through the slots **g** of the motor board. (See Fig.10.)

Reference:
You need not to remove the tray assemblies, and in such case, move it.

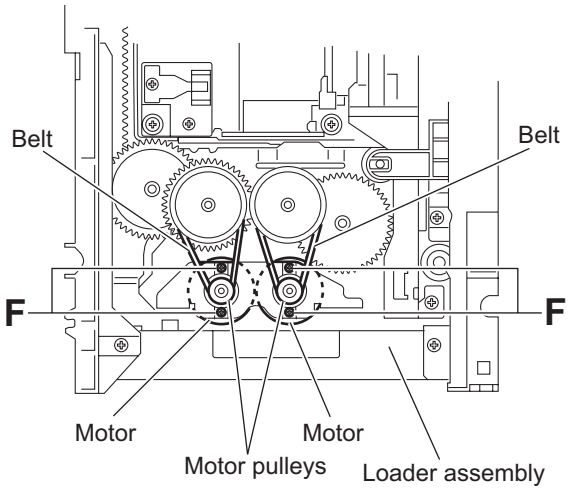


Fig.9

3.2.5 Removing the motor (See Fig. 10)

- Prior to performing the following procedures, remove the motor board.

(1) From the reverse side of the motor board, unsolder the four soldered sections **h** on the motor board.

(2) From the forward side of the motor board, remove the motors.

Note:
When reattaching the motor, turn the side where the label should be put to the front side.

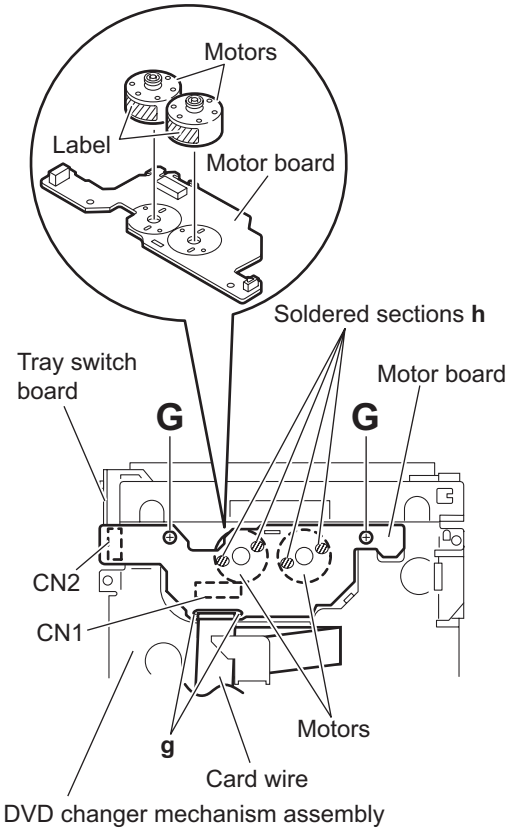


Fig.10

3.2.6 Removing the DVD traverse mechanism assembly (See Fig.11)

- Prior to performing the following procedures, remove the tray assemblies and DVD servo board.
  (1) From the bottom side of the DVD changer mechanism assembly, remove the three screws **H** attaching the DVD traverse mechanism assembly.
  (2) Remove the card wire from the section **i**.
  (3) Remove the wire from the section **j**.
  (4) Take out the DVD traverse mechanism assembly from the DVD changer mechanism assembly.

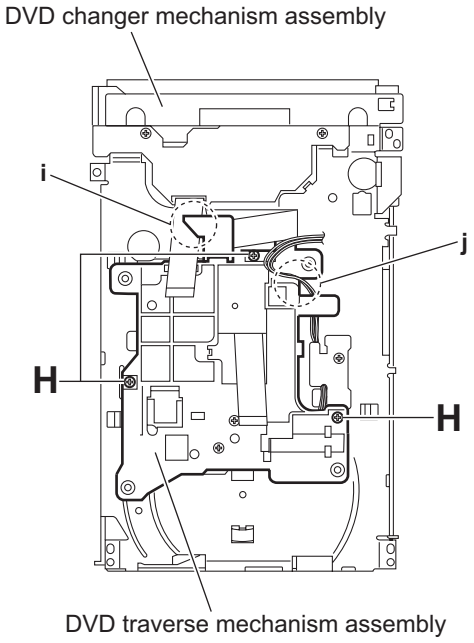


Fig.11

3.2.7 Removing the DVD pickup (See Figs.12 to 14)

- Prior to performing the following procedures, remove the tray assemblies, DVD servo board and DVD traverse mechanism assembly.
  (1) From top side of the DVD traverse mechanism assembly, release the lock of the connector on the DVD pickup and disconnect the card wire in the direction of the arrow. (See Fig.12.)
  (2) Turn the screw shaft gear in the direction of the arrow 1 to move the DVD pickup in the direction of the arrow 2. (See Fig.12.)
  (3) Remove the screw **J** attaching the gear holder. (See Fig.12.)
  (4) Remove the screw **K** attaching the SS adj. spring. (See Fig.12.)
  (5) Move the DVD pickup in the direction of the arrow and remove the screw shaft from the section **k** on the screw shaft holder. (See Fig.13.)
  (6) Remove the section **m** of the DVD pickup from the guide shaft. (See Fig.13.)
  (7) Remove the two screws **L** attaching the rack arm to the DVD pickup. (See Fig.14.)
  (8) Pull the screw shaft from the DVD pickup in the direction of the arrow. (See Fig.14.)

3.2.8 Attaching the DVD pickup (See Figs.12 to 14)

(1) Attach the screw shaft to the DVD pickup and attach the rack arm with the screws **L**. (See Fig.14.)

Reference:

After attaching the screw shaft to the DVD pickup, attach the screw shaft collor to the screw shaft. (See Fig.14.)

(2) Attach the section **m** of the DVD pickup to the guide shaft first and attach the screw shaft to the section **k** on the screw shaft holder. (See Fig.13.)
(3) Attach the gear holder and SS adj. spring with the screws **J** and **K**. (See Fig.12.)
(4) Turn the screw shaft gear to move the DVD pickup toward the left. (See Fig.12.)
(5) Connect the card wire to the connector on the DVD pickup. (See Fig.12.)

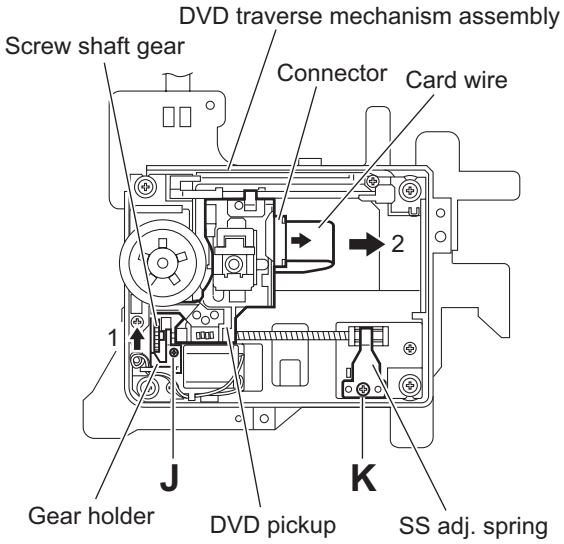


Fig.12

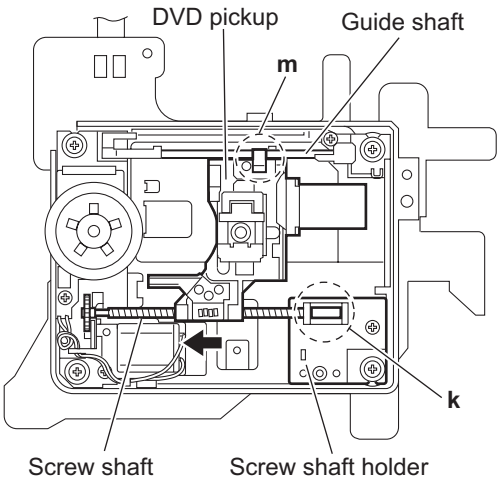


Fig.13

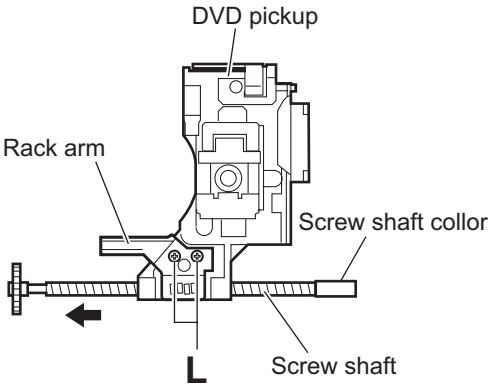


Fig.14

3.2.9 Removing the spindle motor board (See Figs.15 and 16)

- Prior to performing the following procedures, remove the tray assemblies and DVD traverse mechanism assembly.
  (1) From the top side of the DVD traverse mechanism assembly, remove the four screws **M** attaching the DVD traverse mechanism assembly to the DVD traverse mechanism base 3. (See Fig.15.)
  (2) Remove the wires from the soldered section **n** on the spindle motor board. (See Fig.15.)
  (3) Remove the screw **N** attaching the spindle motor board. (See Fig.15.)
  (4) From the bottom side of the DVD traverse mechanism assembly, remove the three screws **P** attaching the spindle motor board. (See Fig.16.)

Reference:

When attaching the spindle motor board, let the card wire through the hole **p** on the SF motor base. (See Fig.15.)

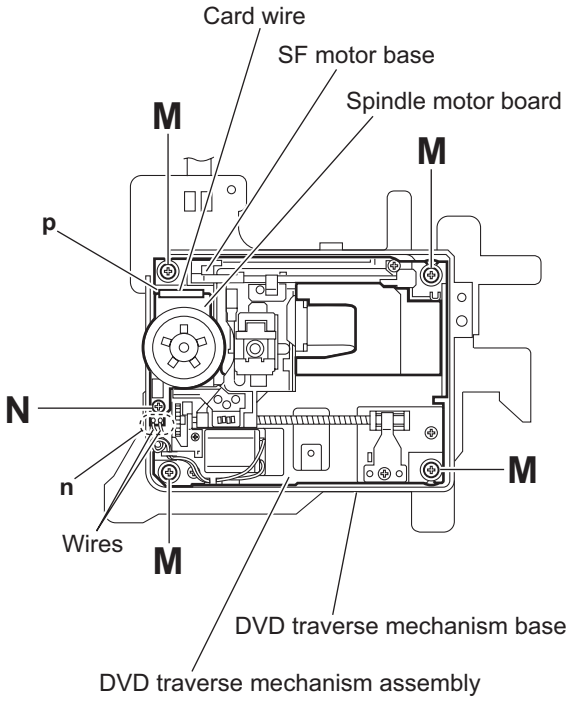


Fig.15

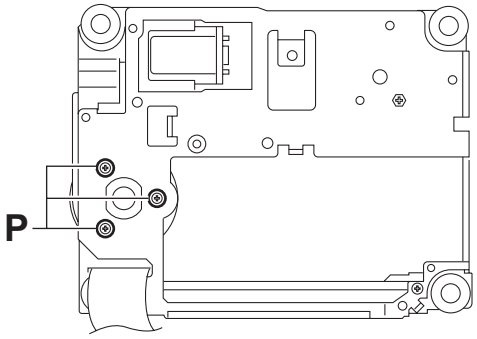


Fig.16

3.2.10 Removing the motor
(See Figs.17 and 18)

- Prior to performing the following procedures, remove the tray assemblies, DVD traverse mechanism assembly, DVD pickup and spindle motor board.
- Remove the wires of the motor as required.
  (1) Remove the middle gear in the direction of the arrow. (See Fig.17.)
  (2) Remove the screw **Q** and screw **R** attaching the SF motor base. (See Fig.17.)
  (3) Remove the screw **S** attaching the motor to the SF motor base. (See Fig.18.)
  (4) Take out the motor from the motor base.

Reference:

After attaching the feed motor, let the wires through the sections **q** and **r** on the SF motor base. (See Fig.17.)

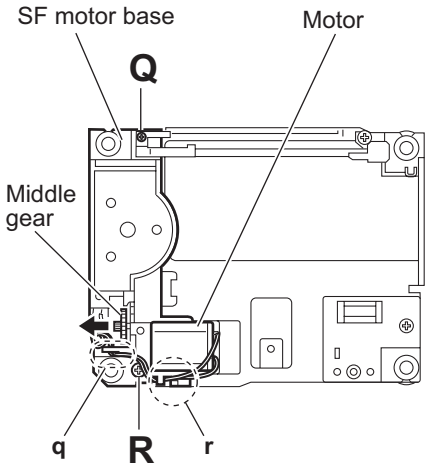


Fig.17

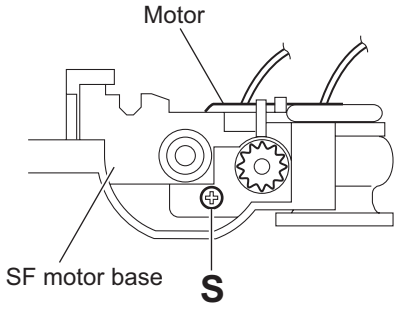


Fig.18

3.2.11 Removing the side (L) assembly and tray switch board (See Figs.19 to 21)

- Prior to performing the following procedures, remove the tray assemblies.
  (1) From the topside of the DVD changer mechanism assembly, remove the two screws **T** attaching the side (L). (See Fig.19.)
  (2) From the left side of the DVD changer mechanism assembly, remove the spacer fixing the tray switch board and motor board. (See Fig.20.)
  (3) Disconnect the connector CN3 on the tray switch board from the motor board and detach the side (L) in an upward direction. (See Fig.20.)
  (4) Remove the screw **U** attaching the tray switch board to the side (L). (See Fig.21.)
  (5) Release the joint tab **s** of the side (L) in the direction of the arrow 1 and release the joint tab **t** while removing the tray switch board in the direction of the arrow 2. (See Fig.21.)

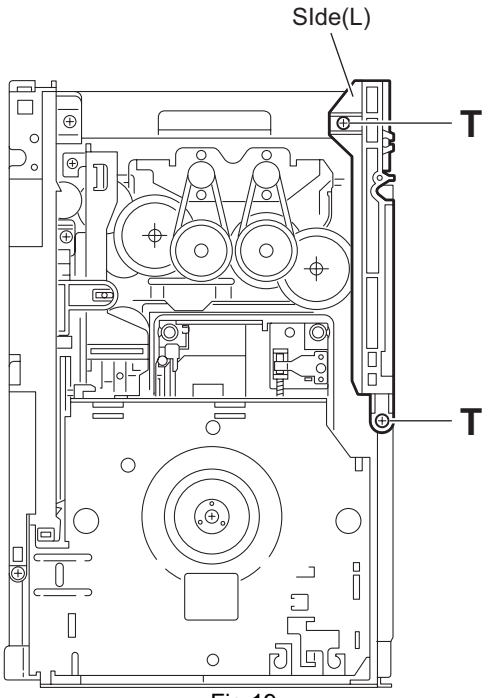


Fig.19

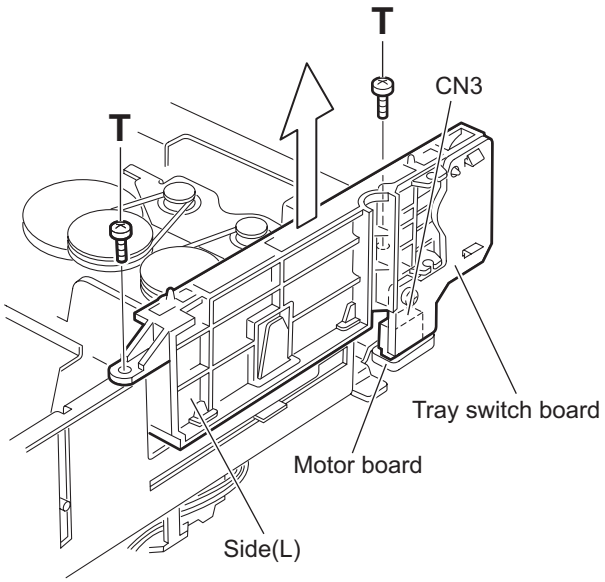


Fig.20

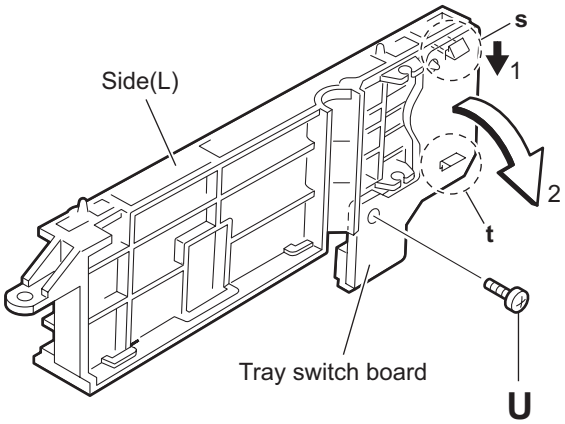


Fig.21

3.2.12 Removing the side (R) assembly (See Fig.22 to 26)

- Prior to performing the following procedures, remove the tray assemblies and DVD servo board.
  (1) From the inside of the side (R) assembly, release the two tabs **u** of the gear cover and remove the gear cover outward. (See Figs.22 and 23.)
  (2) From the right side of the DVD changer mechanism assembly, remove the elevator spring attached to the hook **v** of the loader assembly. (See Figs.23 and 24.)
  (3) From the top side of the DVD changer mechanism assembly, turn the gear 1 clockwise to move the elevator cam rearward. (See Fig.24.)
  (4) Move the two slots **w** and joint **x** of the elevator cam and remove the elevator cam outward. (See Fig.24.)
  (5) Remove the three screws **V** and detaches the side (R) assembly upward. (See Figs.25 and 26.)

Note:

When reattaching the side (R) assembly, make sure to fit the shaft (part y) into the slot of the select lever. (See Fig.25.)

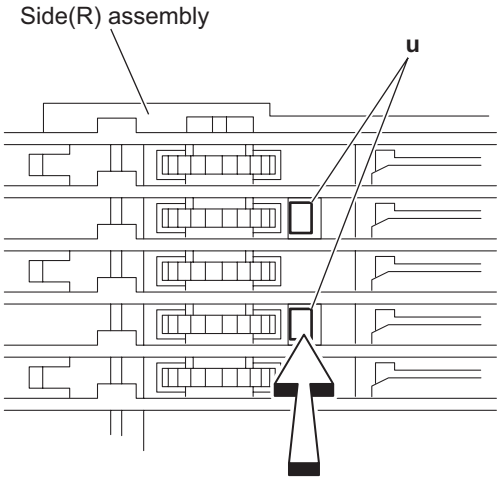


Fig.22

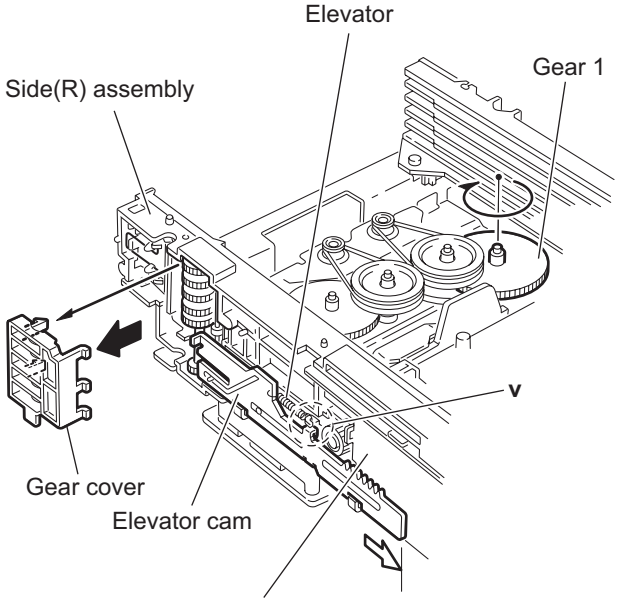


Fig.23

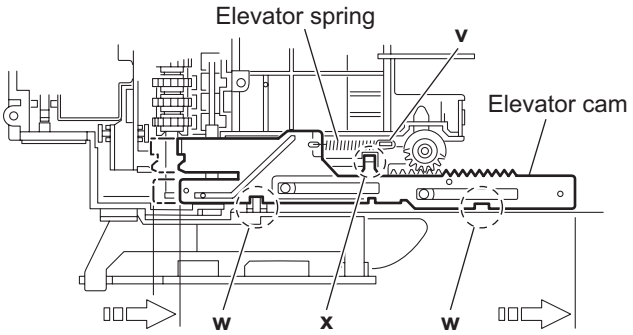


Fig.24

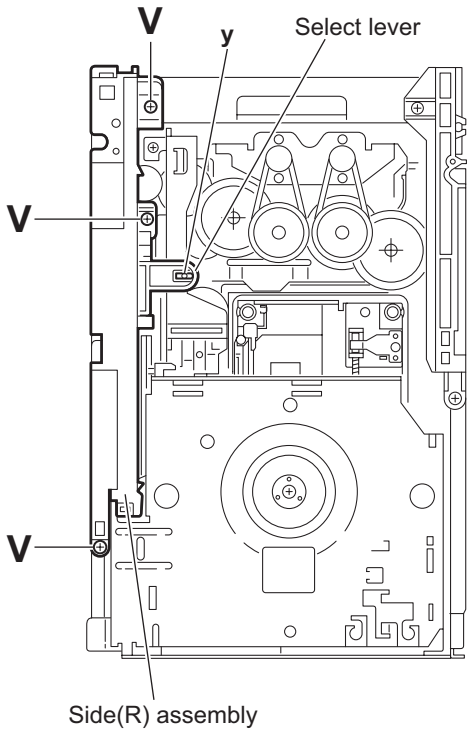


Fig.25

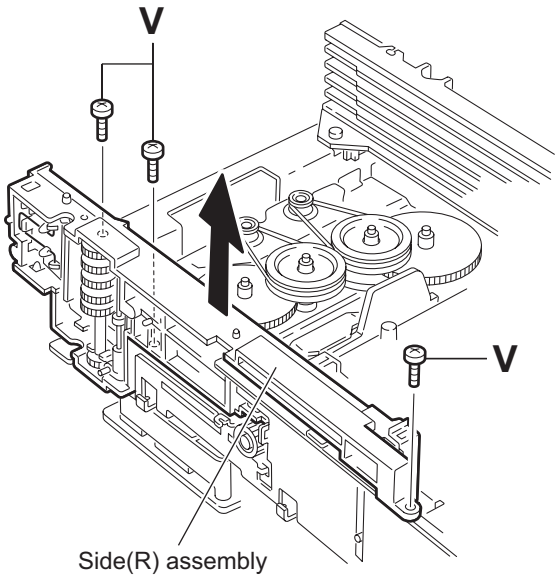


Fig.26

3.2.13 Removing the lifter assembly (See Figs.27 to 31)

- Prior to performing the following procedures, remove the tray assemblies, DVD servo board, side (L) and side (R) assembly.
  (1) From the top side of the DVD changer mechanism assembly, turn the gear 1 clockwise to move the lifter assembly upward. (See Figs.27 and 28.)
  (2) Turn the gear 2 clockwise to move the hook toward the front until it stops. (See Figs.27 and 28.)
  (3) Move the hook stopper in the direction of the arrow 2 while pushing the tab **z** of the hook stopper to unlock it in the direction of the arrow 1 and release four joints **aa** to detach from the rack holder. (See Fig.29.)
  (4) Release the rod from part ab. (See Fig.29.)
  (5) Turn the gear 1 clockwise again to move the lifter assembly upward. (See Fig.30.)
  (6) Remove the lifter assembly from the DVD changer mechanism assembly upward at the positions **ac** where the four pins on the both sides of the lifter assembly fit to the notches of the loader assembly. (See Fig.30.)
  (7) Move the lifter assembly in the direction of the arrow and release it from the hook. (See Fig.31.)

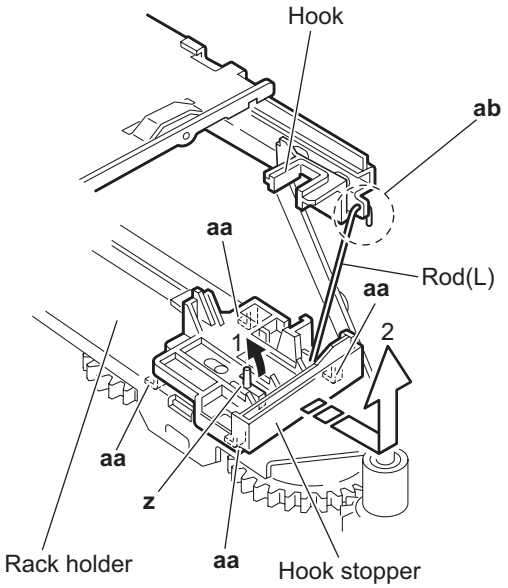


Fig.29

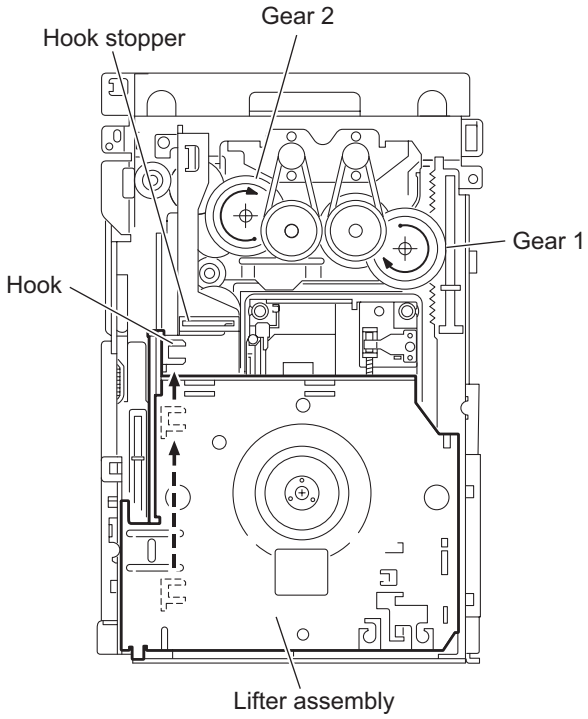


Fig.27

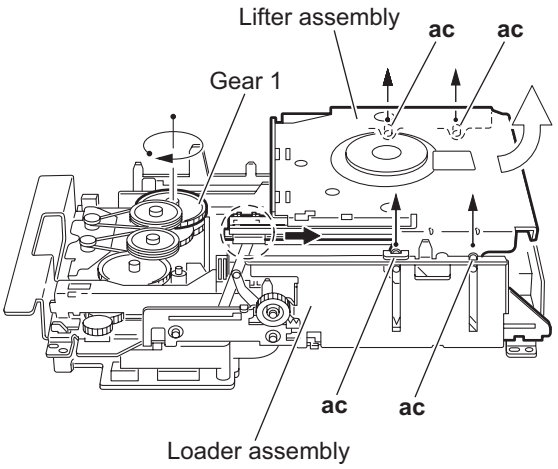


Fig.30

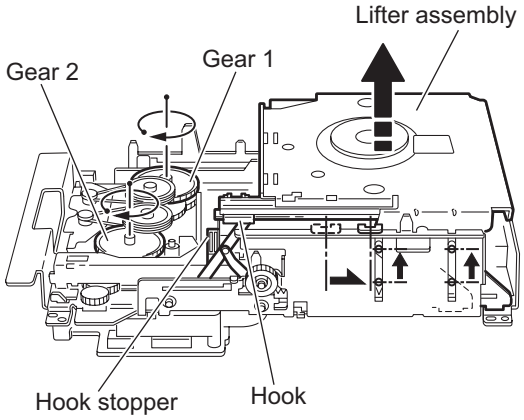


Fig.28

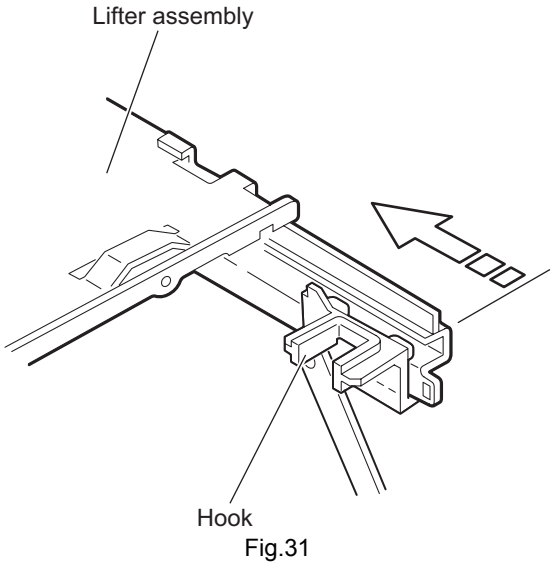


Fig.31

3.2.14 Removing the rack holder and sensor assembly (See Figs.32 to 38)

- Prior to performing the following procedures, remove the tray assemblies, side (L), side (R) assembly and lifter assembly.

Reference:

If the slide gear of the DVD changer mechanism assembly places at joint **ad** of the rack holder, turn the gear 1 counter-clockwise to move the slide gear in the direction of the arrow. Then Remove the rack holder. (See Figs.32 and 33.)

(1) Remove the three screws **W** attaching the rack holder and release joint **ad** from the notch **ae**. (See Figs.32 and 34.)

Note:

When reattaching the rack holder, do not nip the wires extending from the sensor assembly. (See Fig.32.)

(2) Remove the two screws **X** attaching the sensor assembly. (See Figs.35 and 38.)

(3) Move the sensor assembly in the direction of the arrow to release from the joint section **af**. (See Figs.35 and 38.)

(4) Remove the sensor spring attached to the bottom of the sensor assembly from the boss **ag** on the slider. (See Figs.35 and 36.)

(5) Remove the screw **Y** and **Z** attaching the sensor board and SV. resister respectively. (See Fig.37.)

Reference:

Remove the soldered section **aj** on the sensor board as required. (See Fig.37.)

Note:

- When reattaching the SV. resister, attach the slider to the sensor bracket and fit the lever on the bottom of the SV. resister into slot **ak** of the sensor slider. (See Figs.36 and 37.)
- When reattaching the rack holder, turn the gear 1 clockwise to move the slide gear and slide lever inside the body in the direction of the arrow. (See Figs.32 and 38.)
- Let the wire extending from the sensor assembly through notch **ah** to the bottom of the DVD changer mechanism assembly. (See Figs.35 and 38.)
- Fit pin am of the slide lever into hole **ai** of the slider on the bottom of the sensor assembly while attaching the sensor spring to the boss **ag** of the slider. (See Figs.36 and 38.)
- Joint section **af** of the sensor assembly to the notch **an** of the DVD changer mechanism assembly. (See Fig.38.)

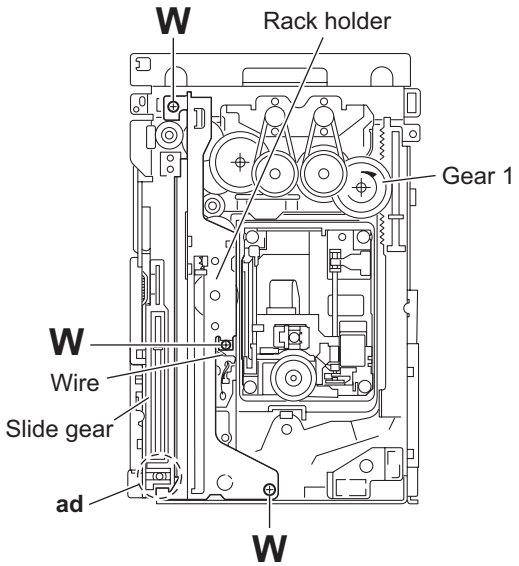


Fig.32

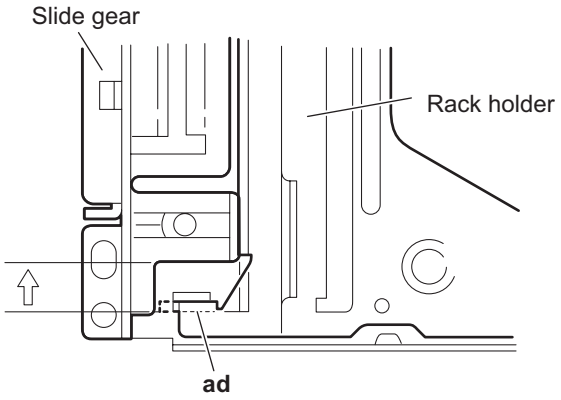


Fig.33

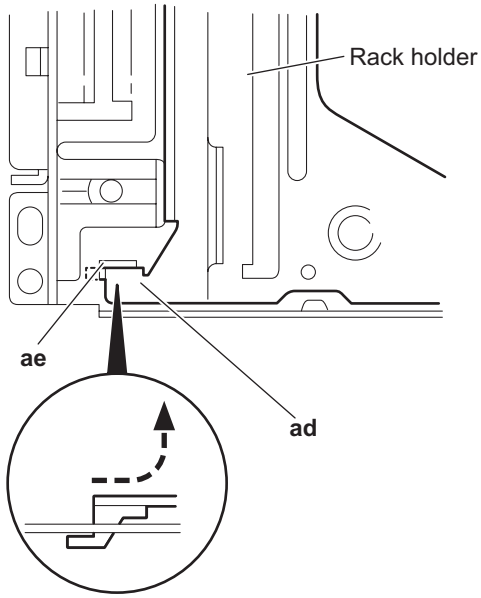


Fig.34

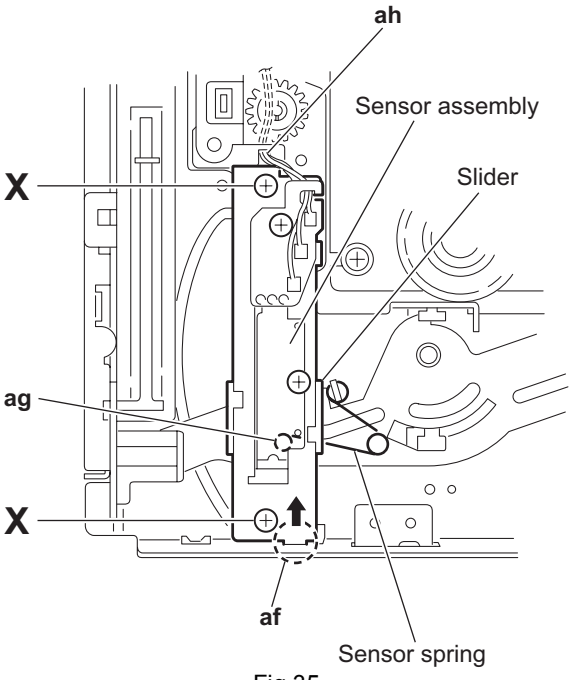


Fig.35

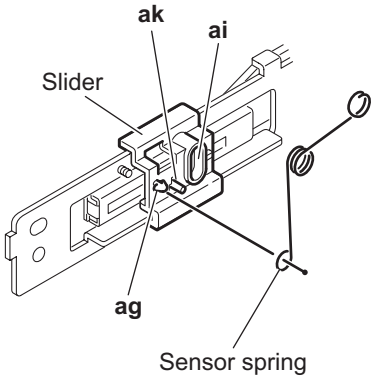


Fig.36

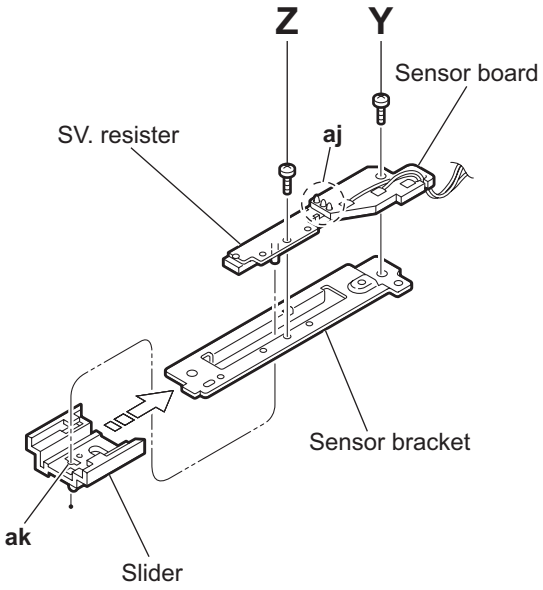


Fig.37

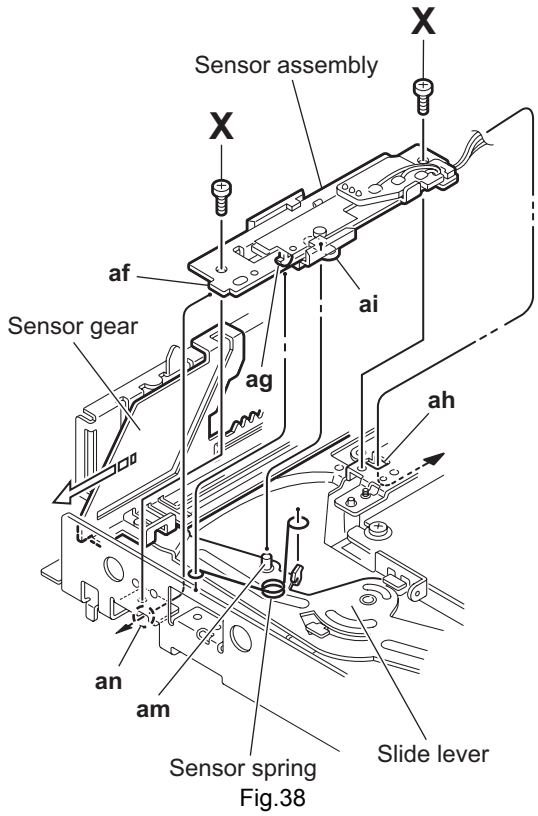


Fig.38

3.2.15 Taking out the disc in the play mode (See Fig.39 to 42)

Reference:

Refer to "Removing the tray assemblies".

(1) From the top side of the DVD changer mechanism assembly, remove the top cover.
(2) Unlock the tray assemblies and draw out the tray assemblies toward the front.
(3) From the top side of the DVD changer mechanism assembly, turn the gear 1 clockwise to move the lifter assembly upward. (See Fig.39.)
(4) Turn the gear 2 clockwise to move the sub tray remaining inside the lifter assembly toward the front, then pull out. (See Fig.39.)
(5) Take out the disc on the sub tray. (See Fig.40.)
(6) After clearing away the disc, insert the sub tray into the main tray. (See Fig.41.)

Note:

When reattaching the sub tray, move the tray stopper on the bottom of the main tray in the direction of the arrow to lock the sub tray certainly. (See Figs.41 and 42.)

(7) Push the tray assembly toward the DVD changer mechanism assembly and reattach.

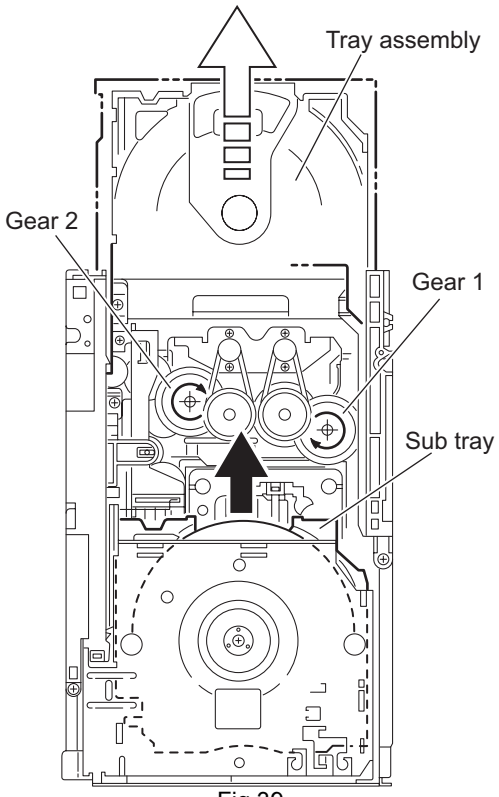


Fig.39

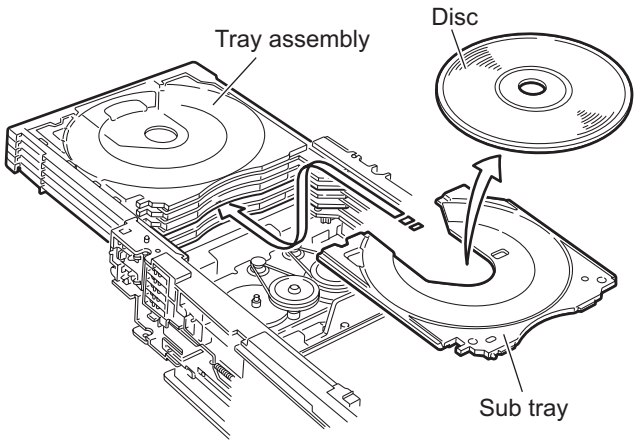


Fig.40

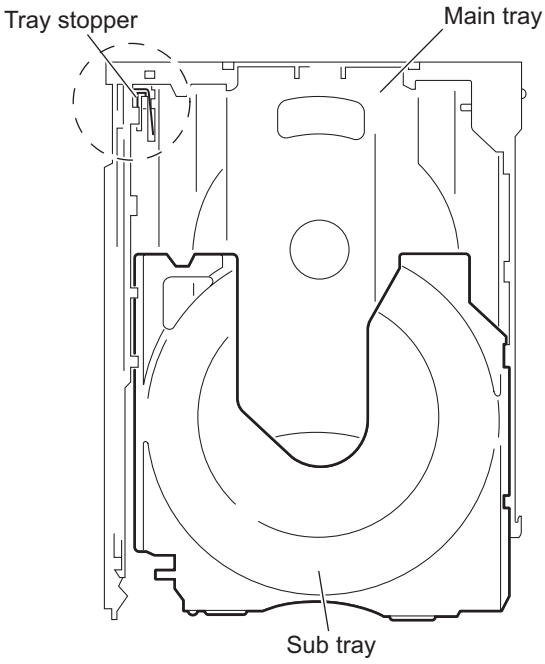


Fig.41

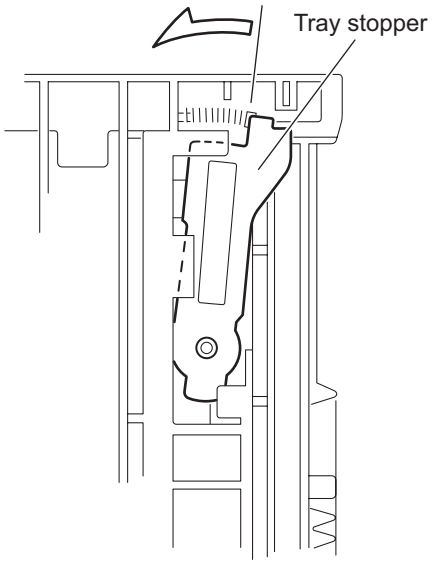


Fig.42

3.3 Cassette mechanism assembly

3.3.1 Removing the Play/Record & Clear head (See Fig.1~3)

(1) While moving the trigger arm on the right side of the head mount in the direction of the arrow, turn the flywheel R counterclockwise until the head mount comes ahead and clicks.
(2) The head turns counterclockwise as you turn the flywheel R counterclockwise (See Fig.2 and 3).
(3) Disconnect the flexible wire from connector CN31 on the head amplifier & mechanism control board.
(4) Remove the spring from the back of the head.
(5) Loosen the azimuth screw for reversing attaching the head.
(6) Remove the head on the front side of the head mount.

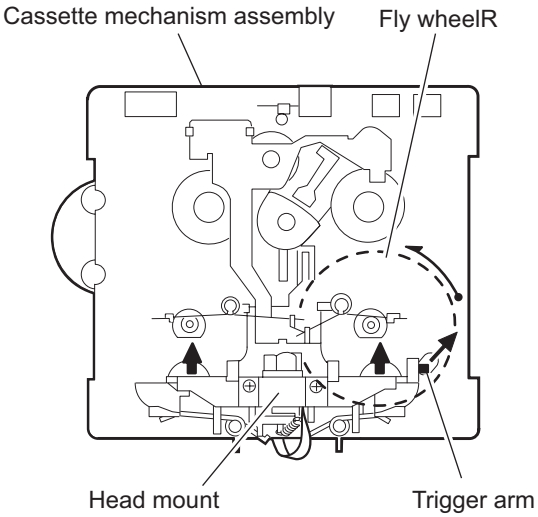


Fig.1

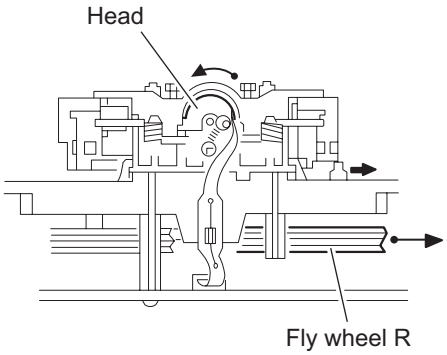


Fig.2

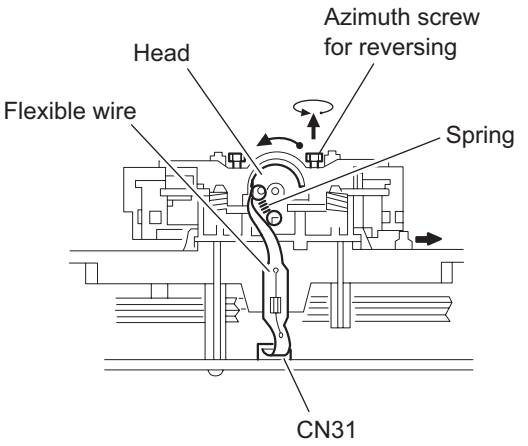


Fig.3

3.3.2 Removing the head amplifier & mechanism control board (See Fig.4)

(1) Turn over the cassette mechanism assembly and remove the three screws **A** attaching the head amplifier & mechanism control board.
(2) Disconnect the flexible wire from connector CN31 on the head amplifier & mechanism control board.
(3) Disconnect connector CN32 of the head amplifier & mechanism control board from connector CN1 on the reel pulse board.REFERENCE: If necessary, unsolder the 4-pin wire soldered to the main motor.

3.3.3 Removing the main motor (See Fig.4~7)

(1) Remove the two screws **B** .
(2) Half raise the motor and remove the capstan belt from the motor pulley.

ATTENTION:

Be careful to keep the capstan belt from grease. When reassembling, refer to Fig.6 and 7 for attaching the capstan belt.

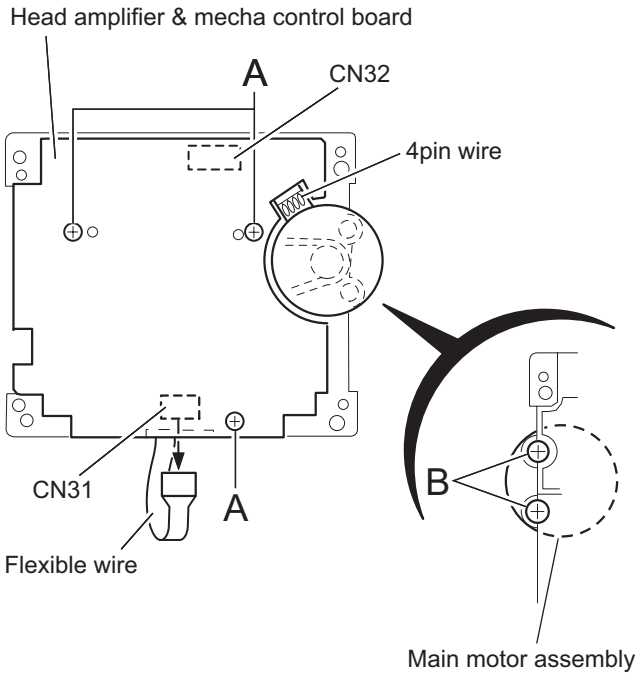


Fig.4

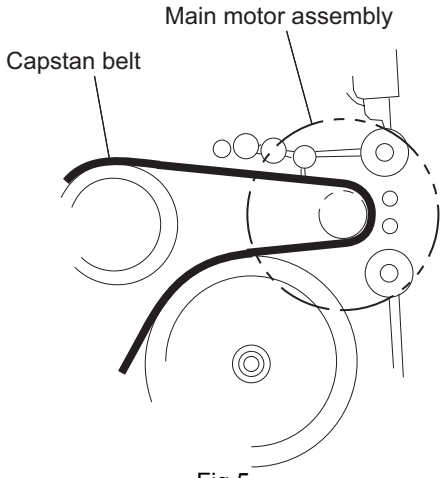


Fig.5

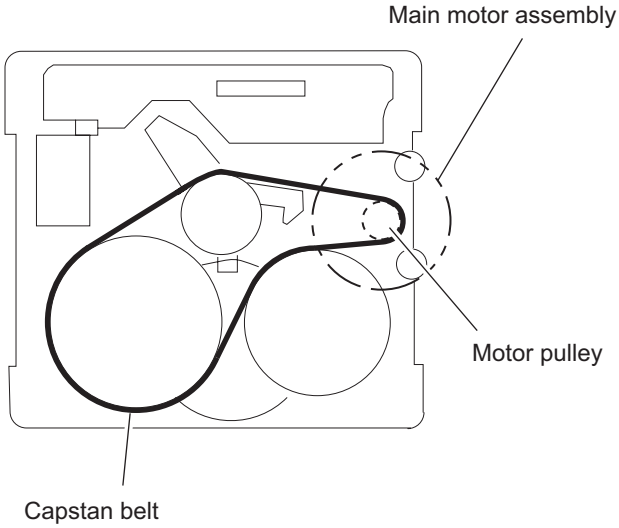


Fig.6

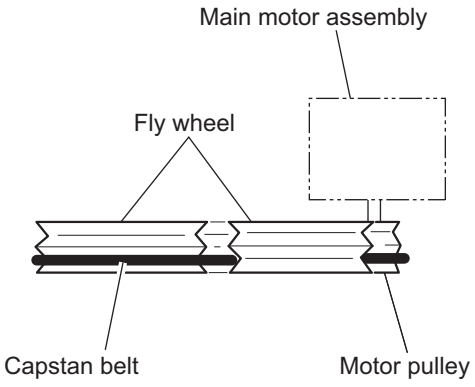


Fig.7

3.3.4 Removing the flywheel (See Fig.8, 9)

- Prior to performing the following procedure, remove the head amplifier & mechanism control board and the main motor assembly.
  (1) From the front side of the cassette mechanism, remove the slit washers attaching the capstan shaft **L** and **R**. Pull out the flywheels backward.

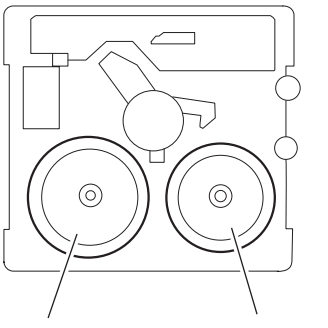


Fig.8

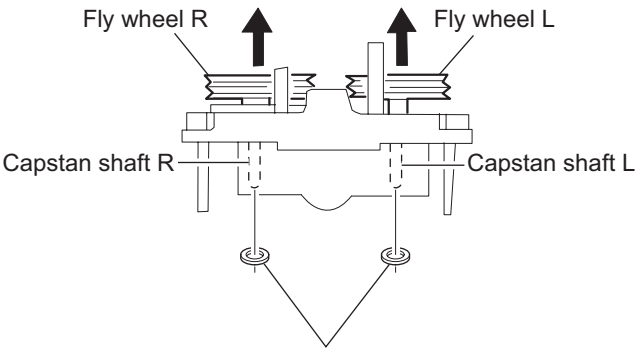


Fig.9

3.3.5 Removing the reel pulse board and solenoid (See Fig.10)

- Prior to performing the following procedure, remove the head amplifier & mechanism control board.
  (1) Remove the screw **C**.
  (2) Release the tab **a**, **b**, **c**, **d** and **e** retaining the reel pulse board.
  (3) Release the tab **f** and **g** attaching the solenoid on the reel pulse board.
  (4) The reel pulse board and the solenoid come off.

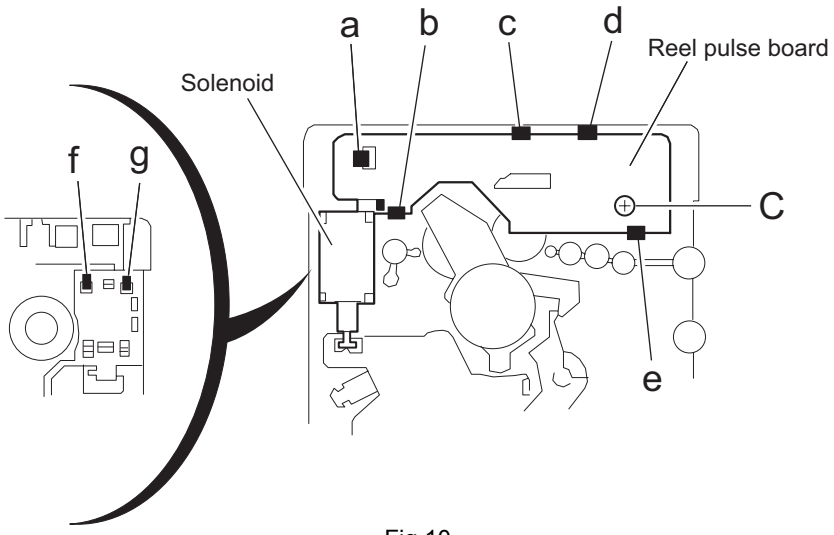


Fig.10

3.3.6 Reattaching the Play/ Record & Clear head (See Fig.11~13)

(1) Reattaching the head mount assembly.
   a) Change front of the direction cover of the head mount assembly to the left (Turn the head forward).
   b) Fit the bosses **O'**, **P'**, **Q'**, **U'** and **V'** on the head mount assembly to the holes **P** and **V**, the slots **O**, **U** and **Q** of the mechanism sub assembly (See Fig.11 to 13).

CAUTION:

To remove the head mount assembly, turn the direction cover to the left to disengage the gear. If the gear can not be disengaged easily, push up the boss **Q'** slightly and raise the rear side of the head mounts slightly to return the direction lever to the reversing side.

(2) Tighten the azimuth screw for reversing.
(3) Reattach the spring from the back of the Play/ Record & Clear head.
(4) Connect the flexible wire to connector CN31 on the head amplifier & mechanism control board.

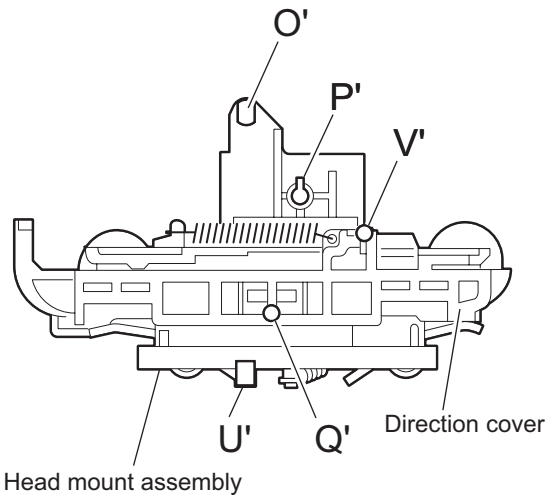


Fig.11

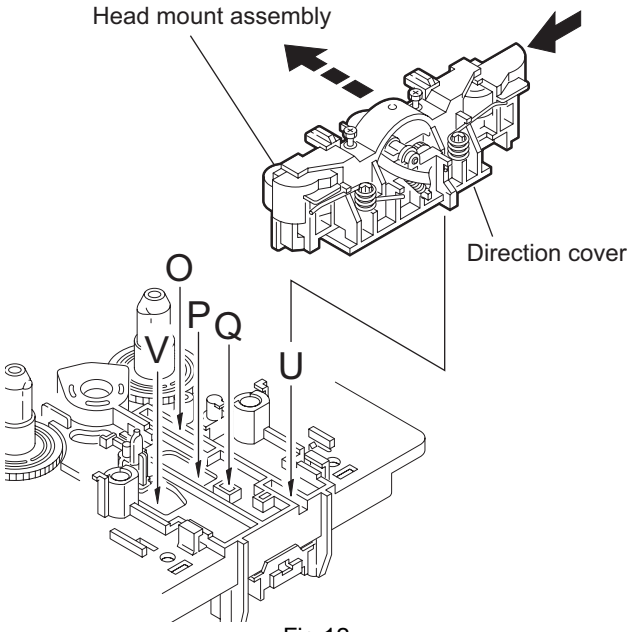


Fig.12

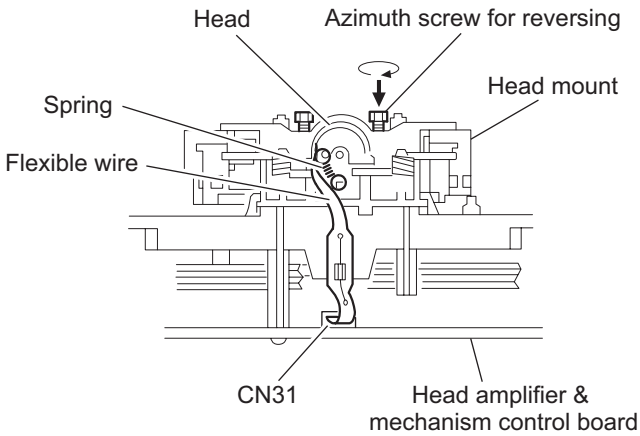


Fig.13

3.4 Speaker section

3.4.1 Removing the side panel assembly (See Fig.1)

(1) From the side of the speaker main body, remove the four screws **A** and two screws **B** attaching the side panel assembly.

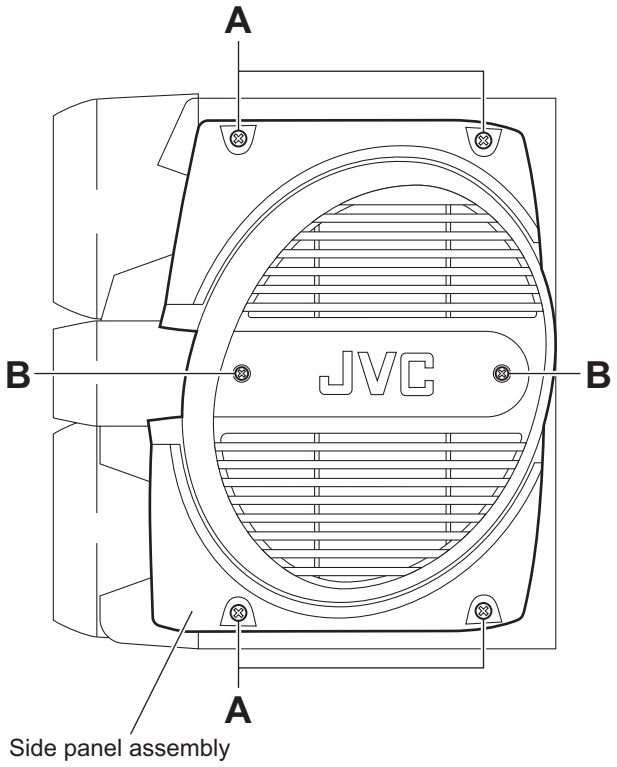


Fig.1

3.4.2 Removing the subwoofer (See Fig.2)

- Prior to performing the following procedures, remove the side panel assembly.
  (1) Remove the six screws **C** attaching the subwoofer.
  (2) From the back side of the subwoofer, disconnect the red and black wires from the terminal.

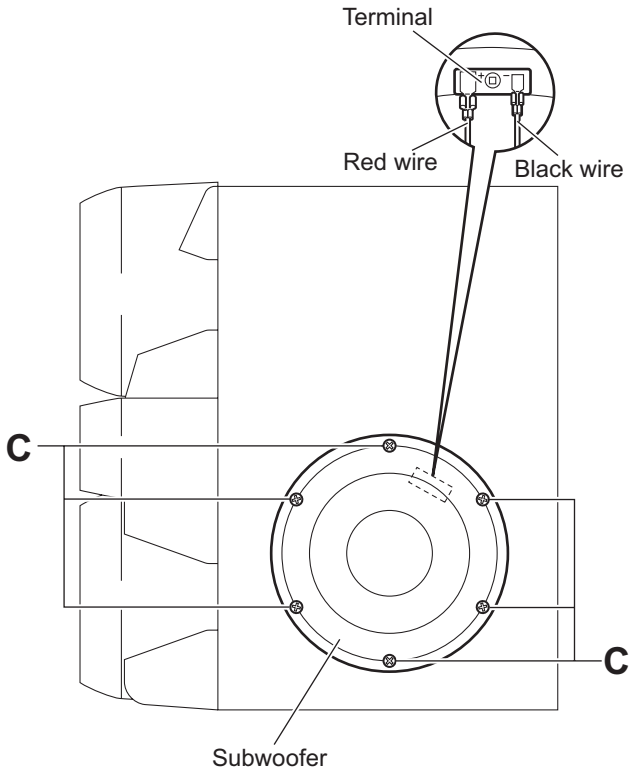


Fig.2

3.4.3 Removing the front panel assembly (See Figs.3 and 4)

Reference:

Remove the side panel assembly as required.

(1) Remove the four screws **D** attaching the front panel assembly. (See Fig.3.)

(2) Release the two joints **a**. (See Fig.3.)

Caution:

When removing the front panel assembly from the speaker main body, do not break or damage them that are glued at the joints **a**. (See Fig.3.)

(3) From the inside of the front panel assembly, disconnect the yellow and black wires from the two terminals on the tweeter. (See Fig.4.)

3.4.4 Removing the tweeter (See Fig.4)

- Prior to performing the following procedure, remove the front panel assembly.

(1) From the inside of the front panel assembly, remove the two screws **E** attaching the tweeter.

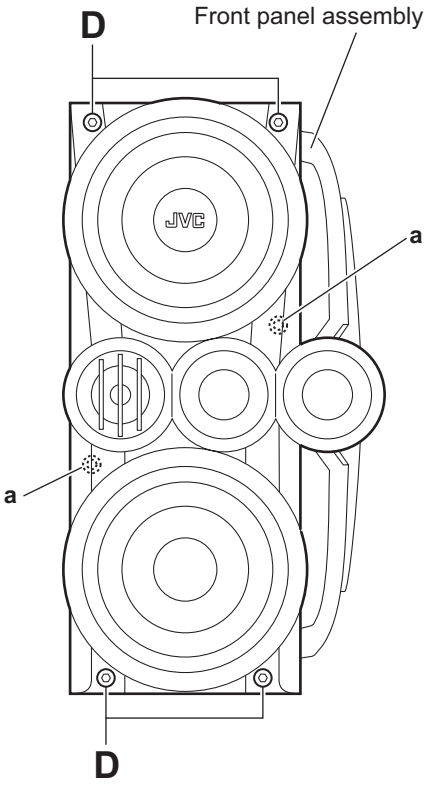


Fig.3

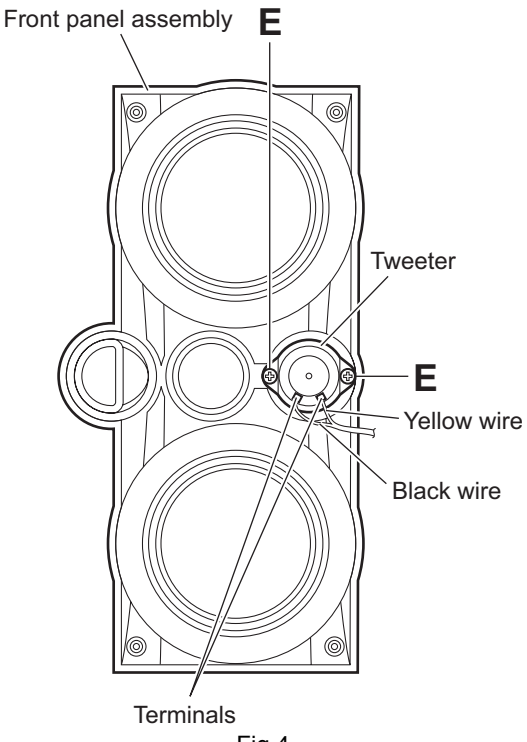


Fig.4

3.4.5 Removing the top woofer (See Fig.5)

- Prior to performing the following procedures, remove the front panel assembly.
  (1) Remove the four screws **F** attaching the top woofer.
  (2) From the back side of the top woofer, disconnect the red and black wires from the terminal.

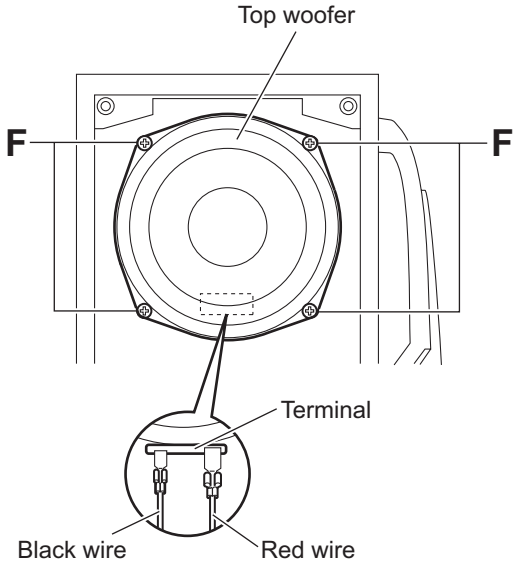


Fig.5

3.4.6 Removing the bottom woofer (See Fig.6)

- Prior to performing the following procedures, remove the side panel and front panel assemblies.
  (1) Remove the four screws **G** attaching the bottom woofer.
  (2) From the back side of the bottom woofer, disconnect the black, red and blue wires from the terminal respectively.

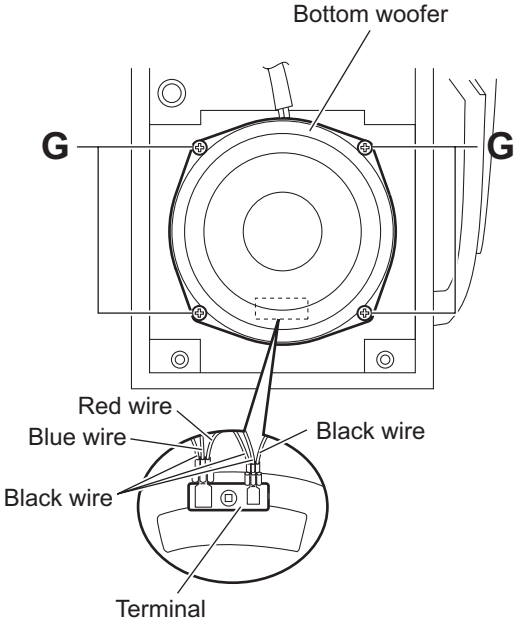


Fig.6

SECTION 4
ADJUSTMENT

4.1 Measurement Instruments Required for Adjustment

(1) Low frequency oscillator
This oscillator should have a capacity to output 0dBs to 600Ω at an oscillation frequency of 50Hz-20kHz.
(2) Attenuator impedance : 600Ω
(3) Electronic voltmeter
(4) Distortion meter
(5) Frequency counter
(6) Wow & flutter meter
(7) Test tape
VT703L : Head azimuth
VT712 : Tape speed and running unevenness (3kHz)
VT724 : Reference level (1kHz)
(8) Blank tape
TYPE Ⅰ : AC-225
TYPE Ⅱ : AC-514
(9) Torque gauge : For play and back tension
FWD(TW2111A), REV(TW2121a) and FF/REW(TW2231A)
(10) Test disc: VT-501, CTS-1000

4.2 Measurement conditons

Power supply voltage	AC 120V ~, 60Hz
Reference output	Speaker : 0.775V/4Ω Headphone : 0.077V/32Ω
Reference frequency and input level	1kHz, AUX : -8dBs
Measurement output terminal	at Speaker J200
Load resistance	4Ω

4.2.1 Radio Input signal

AM frequency	400Hz
AM modulation	30%
FM frequency	400Hz
FM frequency deviation	22.5kHz

4.2.2 Tuner section

FM Band cover	87.5~108.0MHz
AM Band cover	530~1,710kHz
Voltage applied to tuner	+B : DC5.7V VT : DC 12V
Reference measurement output	26.1mV(0.28V)/3Ω
Input positions	AM : Standard loop antenna FM : TP1 (hot) and TP2 (GND)

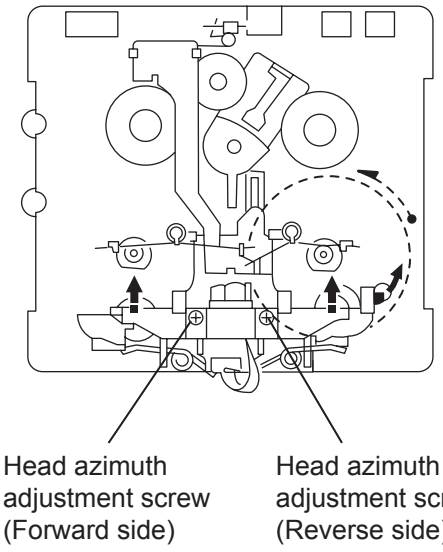
4.2.3 Standard measurement position of volume

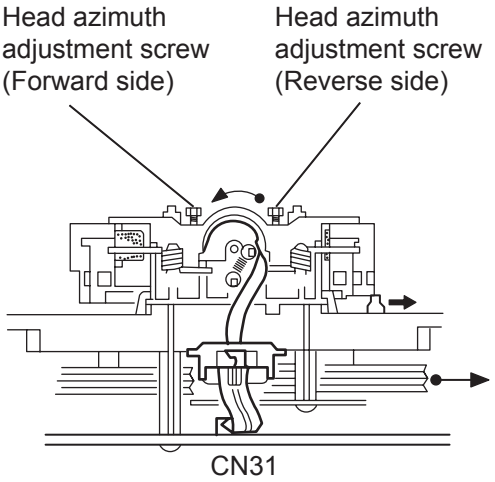
Function switch	to Tape
Beat cut switch	to Cut
Super Bass/Active hyper Bass	to OFF
Bass Treble	to Center
Adjustment of main volume to reference output	VOL : 28

Precautions for measurement

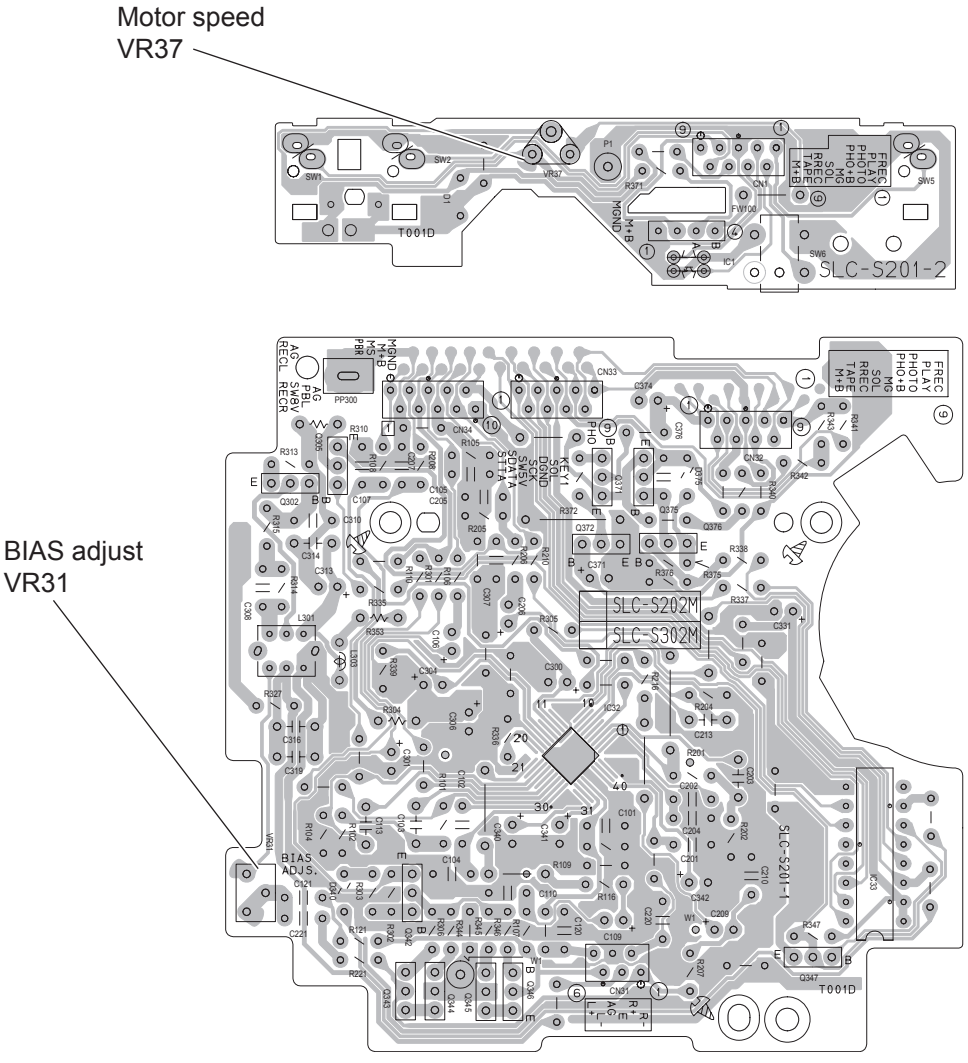
(1) Apply 30pF and 33kΩ to the IF sweeper output side and 0.082μ F and 100kΩ in series to the sweeper input side.
(2) The IF sweeper output level should be made as low as possible within the adjustable range.
(3) Since the IF sweeper is a fixed device, there is no need to adjust this sweeper.
(4) Since a ceramic oscillator is used, there is no need to perform any MIX adjustment.
(5) Since a fixed coil is used, there is no need to adjust the FM tracking.
(6) The input and output earth systems are separated. In case of simultaneously measuring the voltage in both of the input and output systems with an electronic voltmeter for two channels, therefore, the earth should be connected particularly carefully.
(7) In the case of BTL connection amp., the minus terminal of speaker is not for earthing. Therefore, be sure not to connect any other earth terminal to this terminal. This system is of an BTL system.
(8) For connecting a dummy resistor when measuring the output, use the wire with a greater code size.
(9) Whenever any mixed tape is used, use the band pass filter (DV-12).

4.3 Cassette mechanism adjustment





Mecha control board



4.3.1 Mechanism section

Item	Condition	Measurement method	Ref. value	Adjustment position
Head azimuth	Test tape :VT703L (8kHz) Output terminal :Speaker out	(1) Playback the test tape VT703L (8kHz). (2) Adjust to maximum output level by azimuth adjustment screw for forward side and reverse side. (3) This adjustment is adjust by adjustment screw of forward side and adjustment screw of reverse side.	Maximum output	Only adjust at changed head
Tape speed	Test tap :VT712 (3kHz) Output terminal :Speaker out or Headphone out	Playback the test tape VT712 (3kHz) at end of forward side,adjust to 2,940~3,90Hz indication of frequency counter by VR37.	2,940 ~ 3,090Hz	VR37

Item	Condition	Measurement method	Ref. value	Adjustment position
Tape speed diviation at FWD/REV	Test tape : VT712 (3kHz) Output terminal :Speaker out or Headphone out	Playback the test tape VT712 (3kHz) at end of forward and reverse, tape speed deviation should be less than 6.0Hz.	Leass than 6.0Hz	VR31
Wow & Flutter	Test tape : VT712 (3kHz) Output terminal :Speaker out or Headphone out	Playback the test tape VT712 (3kHz) at start of forward and reverse, Wow & Flutter are should be less than 0.25%(WRMS).	Less than 0.25% (WRMS)	

4.3.2 Electrical adjustment

Item	Condition	Measurement method	Ref. value	Adjustment position
Recording BIAS adjustment	• Forward or Reverse • Test tape : AC-514 TYPE II : AC-225 TYPE I • Output termina Recording head	(1) Set the test tape(AC-514 TYPE II and AC-225 TYPE I), then make REC/PAUSE condition. (2) Connect 100Ω to recording head by series, then connect to VTVM for measurement the current. (3) After setting, start the recording by release the PAUSE, in this time bias current adjust to next fig. by VR31 for Lch and VR32 for Rch. 4.0 μA (TYPE II) and 4.20 μA (TYPE I).	AC-225 : 4.20μA AC-514 : 4.0μA	VR31
R/P playback frequency response	• Reference frequency : 1kHz / 10kHz (Reference: -20dB) • Test tape : AC-514 TYPE II • Input terminal : OSC IN	(1) Set the test tape (AC-514 TYPE), then make REC/PAUSE condition. (2) Release the PAUSE, then start recording the 1kHz and 10kHz of reference frequency from oscillator. (3) Playback the recorded position, 1kHz and 10kHz output deviation should -1dB 2dB to readjust by VR31 for Lch and VR32 for Rch.	Output deviation 1kHz/10kHz : -1dB ± 2dB	VR31

4.3.3 Electrical response confirmation

Item	Condition	Measurement method	Ref. value	Adjustment position
Recording bias current	• Forward or Reverse • Test tape : TYPE II (AC-514) • Measurement terminal : BIAS test point on printed circuit board	(1) Change BIAS1 and 2, confirm the frequency should be change. (2) Set the test tape (AC-514 TYPE II), then make REC/PAUSE condition. (3) Confirm the frequency should 100Hz ± 6kHz at BIAS test point on printed circuit board.	100 kHz ± 6 kHz	
Erase current (reference value)	• Forward or Reverse • Rec condition Test tape : AC-514 TYPE II : AC-225 TYPE I • Measurement terminal Both side of Erase head	(1) Set the test tape (AC-514 TYPE II and AC-225 TYPE I), then make REC/PAUSE condition. (2) Release the PAUSE to REC condition, connect 1W to ERASE head by series, then confirm the erase current at both side of erase head.	TYPE II : 120 mA TYPE I : 75 mA	

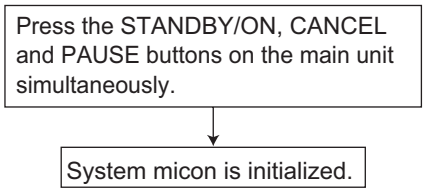
4.4 Service mode

4.4.1 Confirming contents

(1) System micon reset
(2) System micon cold start
(3) FL display check
(4) Micon version check
(5) DVD region check
(6) DVD test mode

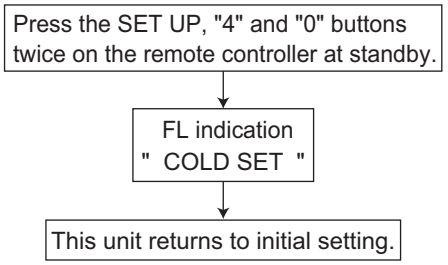
4.4.2 Confirming methods

1. System micon reset
   When CD mechanism stuck, this may solve the problem without removing/inserting power cord.

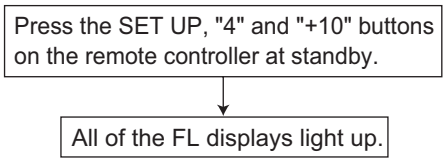


2. System micon cold start
   This function clears all user setting, and return to initial setting.

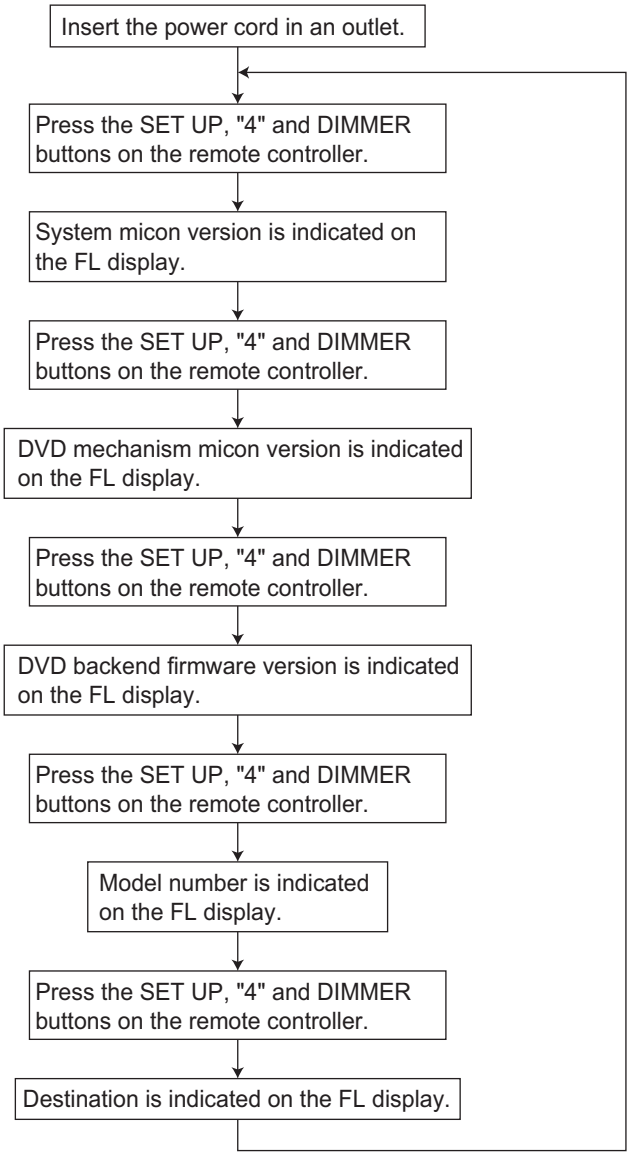
   - Daily timer, REC timer
   - Tuner preset
   - SEA preset
   - Last condition (Source, Volume)


Press the SET UP, "4" and "0" buttons twice on the remote controller at standby.
FL indication
" COLD SET "
This unit returns to initial setting.

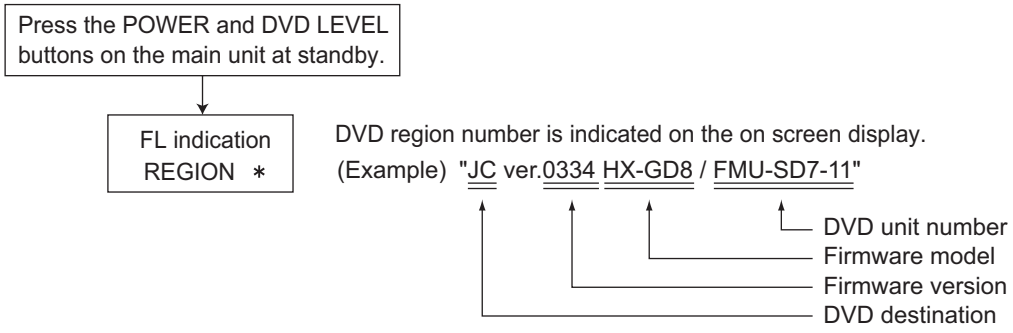
3. FL display check
   This enables all FL segment light up.



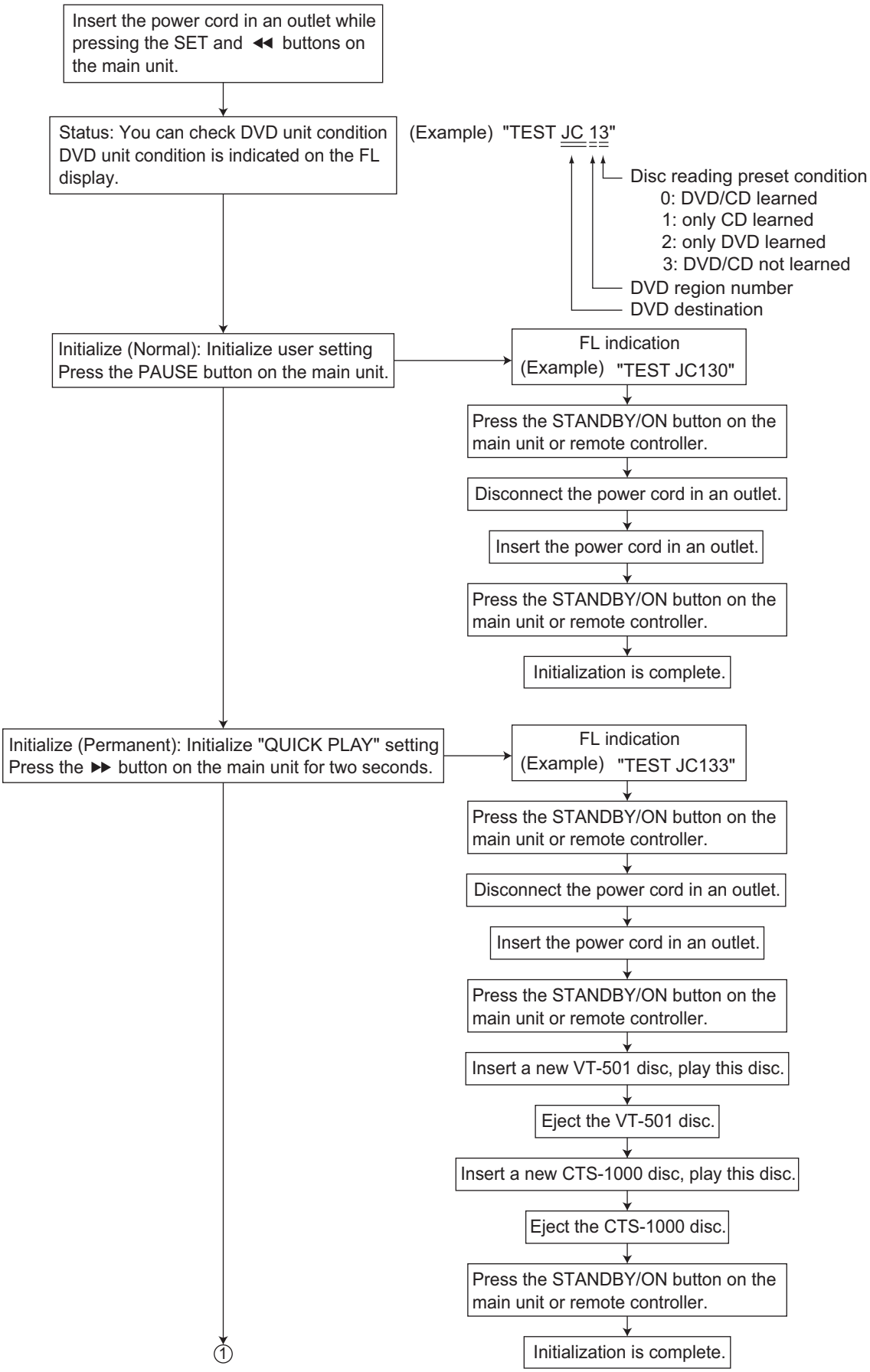
4. Micon version check
You can confirm Micon version and destination.

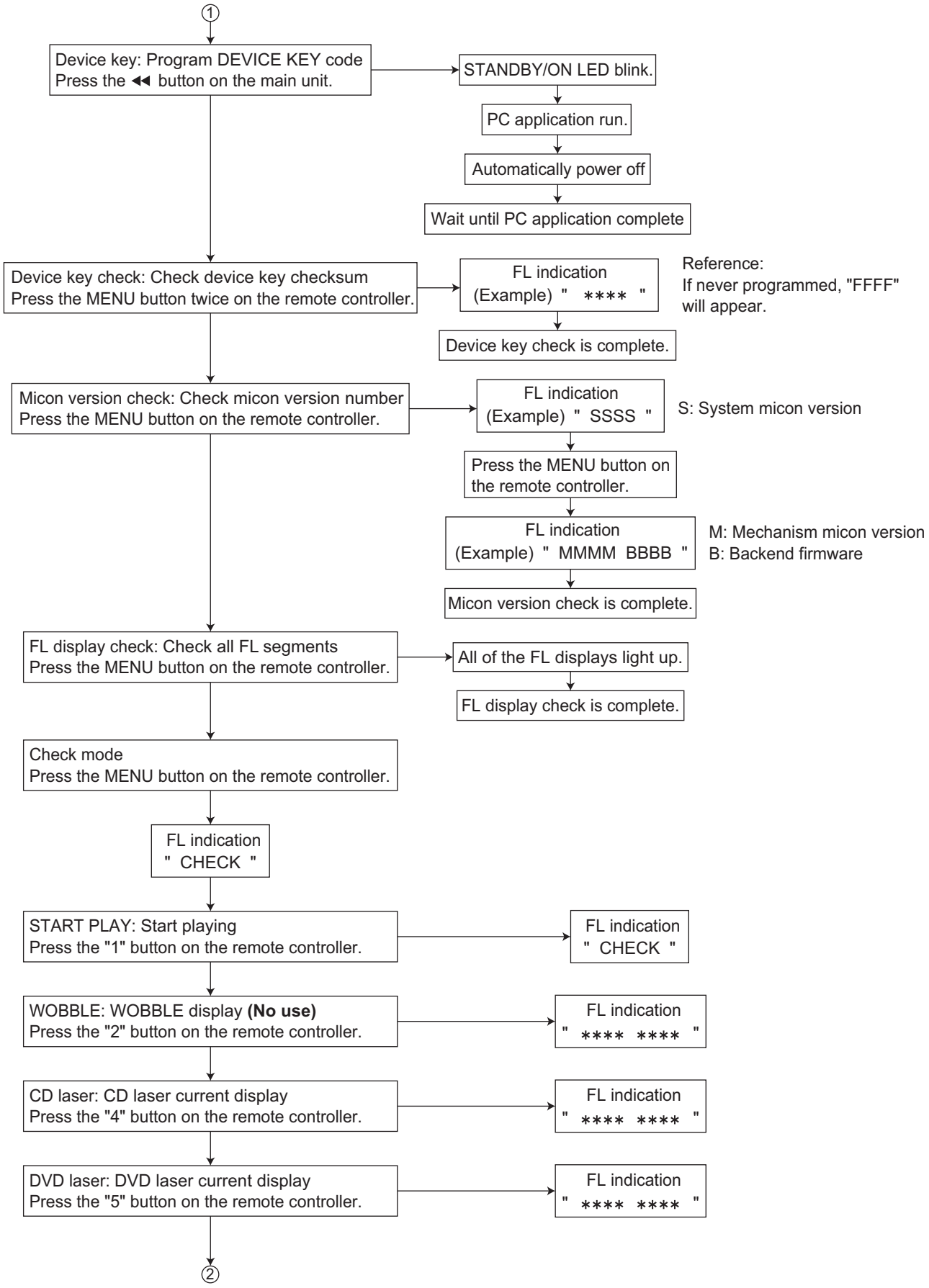

Insert the power cord in an outlet.
Press the SET UP, "4" and DIMMER buttons on the remote controller.
System micon version is indicated on the FL display.
Press the SET UP, "4" and DIMMER buttons on the remote controller.
DVD mechanism micon version is indicated on the FL display.
Press the SET UP, "4" and DIMMER buttons on the remote controller.
DVD backend firmware version is indicated on the FL display.
Press the SET UP, "4" and DIMMER buttons on the remote controller.
Model number is indicated on the FL display.
Press the SET UP, "4" and DIMMER buttons on the remote controller.
Destination is indicated on the FL display.

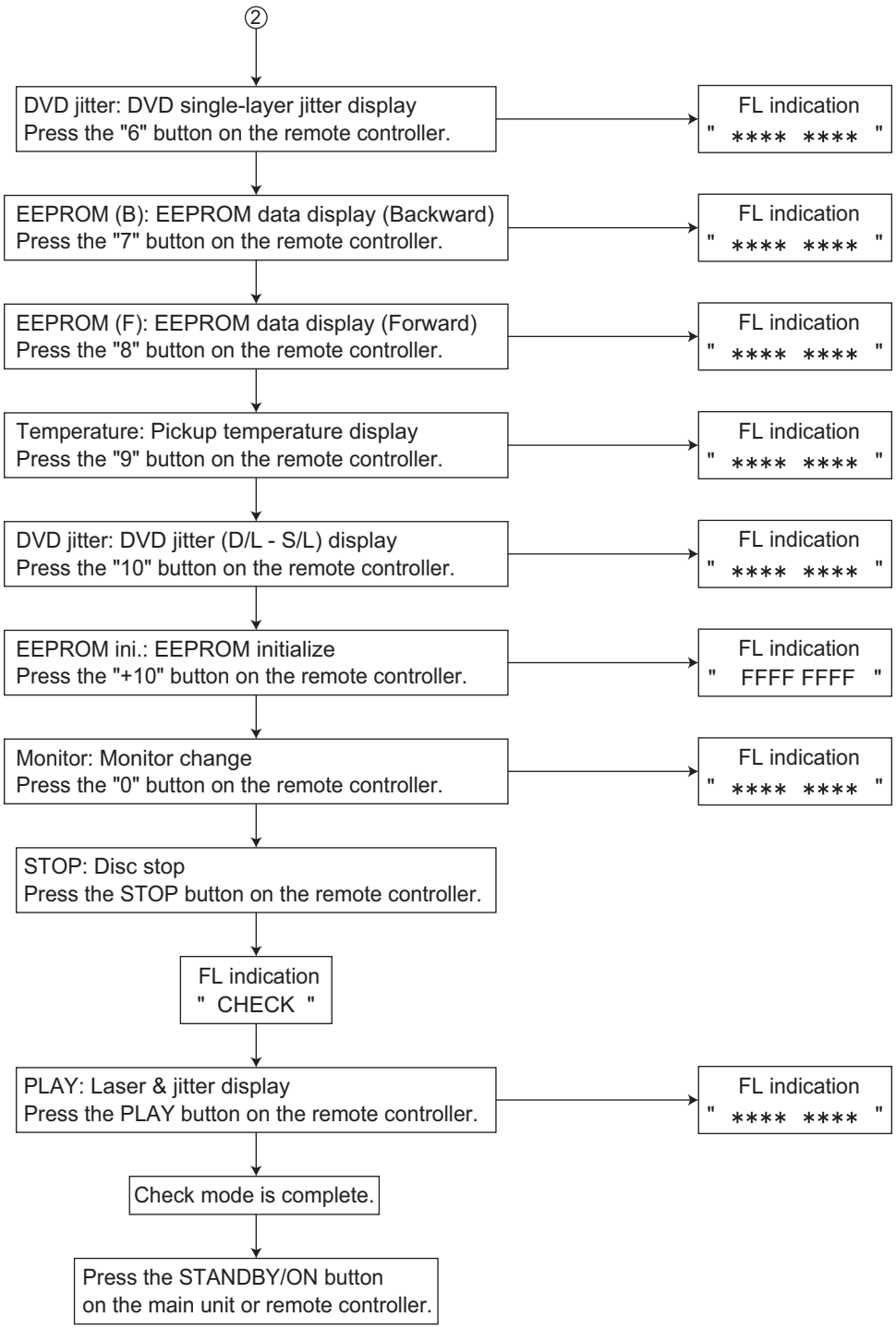
5. DVD region check
You can confirm DVD region number.


Press the POWER and DVD LEVEL buttons on the main unit at standby.
FL indication
REGION ＊
DVD region number is indicated on the on screen display.
(Example) "JC ver.0334 HX-GD8 / FMU-SD7-11"
DVD unit number
Firmware model
Firmware version
DVD destination

6. DVD test mode


Insert the power cord in an outlet while pressing the SET and ◄◄ buttons on the main unit.
Status: You can check DVD unit condition DVD unit condition is indicated on the FL display.
(Example) "TEST JC 13"
Disc reading preset condition
0: DVD/CD learned
1: only CD learned
2: only DVD learned
3: DVD/CD not learned
DVD region number
DVD destination
Initialize (Normal): Initialize user setting Press the PAUSE button on the main unit.
FL indication
(Example) "TEST JC130"
Press the STANDBY/ON button on the main unit or remote controller.
Disconnect the power cord in an outlet.
Insert the power cord in an outlet.
Press the STANDBY/ON button on the main unit or remote controller.
Initialization is complete.
Initialize (Permanent): Initialize "QUICK PLAY" setting Press the ►► button on the main unit for two seconds.
FL indication
(Example) "TEST JC133"
Press the STANDBY/ON button on the main unit or remote controller.
Disconnect the power cord in an outlet.
Insert the power cord in an outlet.
Press the STANDBY/ON button on the main unit or remote controller.
Insert a new VT-501 disc, play this disc.
Eject the VT-501 disc.
Insert a new CTS-1000 disc, play this disc.
Eject the CTS-1000 disc.
Press the STANDBY/ON button on the main unit or remote controller.
Initialization is complete.
①


①
Device key: Program DEVICE KEY code
Press the ◀◀ button on the main unit.
STANDBY/ON LED blink.
PC application run.
Automatically power off
Wait until PC application complete
Device key check: Check device key checksum
Press the MENU button twice on the remote controller.
FL indication
(Example) " **** "
Reference:
If never programmed, "FFFF"
will appear.
Device key check is complete.
Micon version check: Check micon version number
Press the MENU button on the remote controller.
FL indication
(Example) " SSSS "
S: System micon version
Press the MENU button on
the remote controller.
FL indication
(Example) " MMMM BBBB "
M: Mechanism micon version
B: Backend firmware
Micon version check is complete.
FL display check: Check all FL segments
Press the MENU button on the remote controller.
All of the FL displays light up.
FL display check is complete.
Check mode
Press the MENU button on the remote controller.
FL indication
" CHECK "
START PLAY: Start playing
Press the "1" button on the remote controller.
FL indication
" CHECK "
WOBBLE: WOBBLE display (No use)
Press the "2" button on the remote controller.
FL indication
" **** **** "
CD laser: CD laser current display
Press the "4" button on the remote controller.
FL indication
" **** **** "
DVD laser: DVD laser current display
Press the "5" button on the remote controller.
FL indication
" **** **** "
②


②
DVD jitter: DVD single-layer jitter display
Press the "6" button on the remote controller.
FL indication
" **** **** "
EEPROM (B): EEPROM data display (Backward)
Press the "7" button on the remote controller.
FL indication
" **** **** "
EEPROM (F): EEPROM data display (Forward)
Press the "8" button on the remote controller.
FL indication
" **** **** "
Temperature: Pickup temperature display
Press the "9" button on the remote controller.
FL indication
" **** **** "
DVD jitter: DVD jitter (D/L - S/L) display
Press the "10" button on the remote controller.
FL indication
" **** **** "
EEPROM ini.: EEPROM initialize
Press the "+10" button on the remote controller.
FL indication
" FFFF FFFF "
Monitor: Monitor change
Press the "0" button on the remote controller.
FL indication
" **** **** "
STOP: Disc stop
Press the STOP button on the remote controller.
FL indication
" CHECK "
PLAY: Laser & jitter display
Press the PLAY button on the remote controller.
FL indication
" **** **** "
Check mode is complete.
Press the STANDBY/ON button
on the main unit or remote controller.

4.4.3 Indicating check for FL display

No.	Function	FL display										Note
1	SOURCE											
	DVD-VIDEO	1	2.	3	4		1:	1	2:	3	4	
	DVD-AUDIO	1	2.	3	4		1:	1	2:	3	4	
	CD	C	D	1	2.		1:	1	2:	3	4	
	MP3	1	2.	1	2	2.		1	2:	3	4	If MP3 time is over 100 minutes, show "--:--".
	WMA	1	2.	1	2	2.		1	2:	3	4	If WMA time is over 100 minutes, show "--:--".
	VCD	V	D	1	2.		1:	1	2:	3	4	without PBC
		V	D	1	2.				P	B	C	with PBC
	SVCD	S	V	1	2.		1:	1	2:	3	4	without PBC
		S	V	1	2.				P	B	C	with PBC
	DVD (JPEG)	1	2.	1	2	2.		J	P	E	G	
	TAPE				T	A	P	E				
	AUX			A	U	X		I	N			
	AM	A	M	*	*		1	6	0	2		* *: PRESET NUMBER
	FM	F	M	*	*		1	0	8.	0	0	* *: PRESET NUMBER
2	TUNER		T	U	N	E	R	–	F	M		
			T	U	N	E	R	–	A	M		
	PRESET MEMOERY				S	E	T					BLINKING
	PRESET MEMOERY				P	–	1	2				BLINKING
	PRESET MEMOERY			S	T	O	R	E	D			
3	TAPE				T	A	P	E				
	PLAY				T	A	P	E				
	REVERSE			R	E	V	E	R	S	E		
	FF/REW				T	A	P	E				
	MUSIC SCAN				T	A	P	E				
	REC				T	A	P	E				
	DISC REC		D	I	S	C		R	E	C		"DISC REC FINISHED" SCROLL
	DISC REC STOP	–	–	–	–	–	–	–	–	–	–	
4	VOLUME											
	UP/DOWN	V	O	L	U	M	E		3	0		
	MAX	V	O	L	U	M	E		M	A	X	
	MIN	V	O	L	U	M	E		M	I	N	
	RHYTHM AX											
	ON	R	H	Y	T	H	M		A	X		
						O	N					
	OFF				O	F	F					
	SUBWOOFER											
	LEVEL CHANGE	S	U	B	W	O	O	F	E	R		
	LEVEL CHANGE		S.	W	O	O	F	E	R		0	
	LEVEL CHANGE		S.	W	O	O	F	E	R		1	
	LEVEL CHANGE		S.	W	O	O	F	E	R		2	
	AT LEVEL 0		M	I	N		L	E	V	E	L	
	AT LEVEL 2		M	A	X		L	E	V	E	L	
	SOUND MODE											
	DANCE			D	A	N	C	E				
	HALL				H	A	L	L				
	STADIUM		S	T	A	D	I	U	M			
	ROCK				R	O	C	K				
	POP				P	O	P					
	CLASSIC		C	L	A	S	S	I	C			
	USER1			U	S	E	R		1			
	USER2			U	S	E	R		2			
	USER3			U	S	E	R		3			
	OFF				O	F	F					

No.	Function	FL display										Note
4	3D PHONIC											
	3D ACTION		3	D		A	C	T	I	O	N	
	3D DRAMA		3	D		D	R	A	M	A		
	3D THEATER	3	D		T	H	E	A	T	E	R	
	3D PHONIC OFF		3	D		O	F	F				
									Note: DVD-A cannot be activated 3D-Phonic.			
									Also at Karaoke condition, 3D-PHONIC is			
	TONE SETTING		S	E	A		C	O	N	T		
	TONE MEMORY		B	A	S	S		±	0			RANGE: -3 ～ ± 0 ～ +3
	TONE MEMORY			T	R	E		±	0			RANGE: -3 ～ ± 0 ～ +3
	TONE MEMORY			U	S	E	R		1			NUMBER BLINKING
	TONE MEMORY			M	E	M	O	R	Y			
	TONE MEMORY											
	DVD LEVEL											
	LEVEL 1	D	V	D		L	E	V	E	L	1	
	LEVEL 2	D	V	D		L	E	V	E	L	2	
	LEVEL 3	D	V	D		L	E	V	E	L	3	
5	SLEEP											
	SLEEP 10 – 120	S	L	E	E	P		*	*	*		RANGE: 10/20/30/60/90/120
	CLOCK											
	ADJUST	A	M			1	2:	0	0			HOUR BLINKING
	SET	A	M			1	2.	0	0			MINUTE BLINKING
	SET		C	L	O	C	K		O	K		
	DAILY TIMER											
	SELECT	D	A	I	L	Y	T	I	M	E	R	
		O	N			A	M	1	2:	0	0	HOUR BLINKING
	SET	O	N			A	M	1	2:	0	0	MINUTE BLINKING
	SET				S	E	T					
		O	F	F		A	M	1	2:	0	0	HOUR BLINKING
	SET	O	F	F		A	M	1	2:	0	0	MINUTE BLINKING
	SET				S	E	T					
					D	I	S	C				BLINKING (ALL)
					T	A	P	E				BLINKING
				A	U	X		I	N			BLINKING
			T	U	N	E	R	–	F	M		BLINKING
			T	U	N	E	R	–	A	M		BLINKING
	SET				S	E	T					
		D	1	G		1		T			1	BLINKING DISC (D*)
	SET				S	E	T					
		D	1	G		1		T			1	BLINKING GROUP (G*)
	SET				S	E	T					
		D	1	G		1		T			1	BLINKING TRACK (T*)
	SET				S	E	T					
		V	O	L	U	M	E		–	–		--/5/10/15
	SET				S	E	T		O	K	*	

No.	Function	FL display										Note
5	REC TIMER											
	SELECT		R	E	C		T	I	M	E	R	
		O	N			A	M	1	2:	0	0	HOUR BLINKING
	SET	O	N			A	M	1	2:	0	0	MINUTE BLINKING
	SET				S	E	T					
		O	F	F		A	M	1	2:	0	0	HOUR BLINKING
	SET	O	F	F		A	M	1	2:	0	0	MINUTE BLINKING
	SET				S	E	T					
			T	U	N	E	R	—	F	M		BLINKING
			T	U	N	E	R	—	A	M		BLINKING
	SET				S	E	T					
		F	M	3	0		1	0	8.	0	0	BLINKING
	SET				S	E	T		O	K	*	
6	TEST (ROM) by Remocon											
	"B332"	S	Y	S	C	O	N	*	*	*	*	ROM correction +3 CHARACTORS
		M	O	D	U	L	E	*	*	*	*	4 CHARACTORS (including ROM CORR)
		B	A	K	E	N	D	*	*	*	*	BACKEND VERSION 4 CHARACTORS
		M	D	L		*	*	*	*	*	*	
		V	E	R						*	*	J / E / A / US / UW / UX
	TEST (REGION)											
		R	E	G	I	O	N				*	0/1/2/3/4/5/6
7	DVD STATUS											
	OPEN				O	P	E	N				SOURCE CD and CURRENT ONLY
	CLOSE				C	L	O	S	E			SOURCE CD and CURRENT ONLY
	NO DISC	N	O			D	I	S	C		1	SOURCE CD and CURRENT ONLY
	DISC CHANGE			D	I	S	C		2			SOURCE CD and CURRENT ONLY
	TOC READING			R	E	A	D	I	N	G		SOURCE CD and CURRENT ONLY
	ROM CORRECTION			U	P	G	R	A	D	E		SOURCE CD and CURRENT ONLY
	(SYSCON)											
	ROM CR. OK	S	Y	S	C	O	N			O	K	SOURCE CD and CURRENT ONLY
	ROM CR. NG	S	Y	S	C	O	N		E	R	R	SOURCE CD and CURRENT ONLY
	ROM CORRECTION			U	P	G	R	A	D	E		SOURCE CD and CURRENT ONLY
	(MECHA MICON)											
	ROM CR. OK	M	E	C	H		O	K				SOURCE CD and CURRENT ONLY
	ROM CR. NG	M	E	C	H		E	R	R	O	R	SOURCE CD and CURRENT ONLY
	BACKEND "UPGRADE"			U	P	G	R	A	D	E		SOURCE CD and CURRENT ONLY
	"UNKNOWN" DISC	C	A	N	'	T		P	L	A	Y	SOURCE CD and CURRENT ONLY
	REGION ERROR	R	E	G	I	O	N		E	R	R	SOURCE CD and CURRENT ONLY
8	DVD VIDEO											
	STOP	*	*.					S	T	O	P	After TOC READING
	+10KEY INPUT	1	—.									
	PLAY	1	2.	3	4.		1:	2	3:	4	5	
	PLAY (MENU)		1.	—	—			P	L	A	Y	
	PAUSE	1	2.	3	4.		1:	2	3:	4	5	TIME BLINKING
	SEARCH	1	2.	3	4.		—:	—	—:	—	—	
	RESUME STOP	*	*.					S	T	O	P	
	RESUME PLAY	1	2.	3	4.		1:	2	3:	4	5	RESUME OFF BEFORE PLAY

No.	Function	FL display										Note
9	DVD AUDIO											
	STOP	*	*.	*	*.			S	T	O	P	After TOC READING
	+10KEY INPUT	*	*.	1	–.			S	T	O	P	
	PLAY	1	2.	3	4.		1:	2	3:	4	5	
	PLAY (MENU)	–	–.	–	–.			P	L	A	Y	
	PAUSE	1	2.	3	4.		1:	2	3:	4	5	TIME BLINKING
	SEARCH	1	2.	3	4.		–:	–	–:	–	–	
	RESUME STOP	*	*.	*	*.			S	T	O	P	RESUME
	RESUME PLAY	1	2.	3	4.		1:	2	3:	4	5	RESUME OFF BEFORE PLAY
	DOWNMIX PROHIBITED			L	R		O	N	L	Y		
	WATERMARK		N	O		A	U	D	I	O		
10	VCD											
	STOP (without PBC)	V	D	1	2.		1:	2	3:	4	5	DISPLAY TOTAL TIME
	STOP (with PBC)	V	D						P	B	C	
	PLAY (PBC OFF)	V	D	1	2.		1:	2	3:	4	5	
	PLAY (PBC ON)	V	D	1	2.				P	B	C	
	PAUSE (PBC OFF)	V	D	1	2.		1:	2	3:	4	5	TIME BLINKING
	PAUSE (PBC ON)	V	D	1	2.				P	B	C	
	SEARCH (NORMAL)	V	D	1	2.		–:	–	–:	–	–	
	SEARCH (PBC DISC)	V	D	1	2.				P	B	C	
	+10KEY INPUT	V	D	1	–.		1:	2	3:	4	5	
	VCD											
	STOP (without PBC)	S	V	1	2.		1:	2	3:	4	5	DISPLAY TOTAL TIME
	STOP (with PBC)	S	V						P	B	C	
	PLAY (PBC OFF)	S	V	1	2.		1:	2	3:	4	5	
	PLAY (PBC ON)	S	V	1	2.				P	B	C	
	PAUSE (PBC OFF)	S	V	1	2.		1:	2	3:	4	5	TIME BLINKING
	PAUSE (PBC ON)	S	V	1	2.				P	B	C	
	SEARCH (NORMAL)	S	V	1	2.		–:	–	–:	–	–	
	SEARCH (PBC DISC)	S	V	1	2.				P	B	C	
	+10KEY INPUT	S	V	1	–.		1:	2	3:	4	5	
11	MP3/WMA											
	STOP	*	*	*	*	*	*	*	*	*	*	GROUP FILE NAME SCROLL
	STOP		1.			1.		S	T	O	P	
	→ GROUP SEARCH	*	*	*	*	*	*	*	*	*	*	GROUP FILE NAME SCROLL
	→ GROUP SEARCH		2.			1.		S	T	O	P	
	PLAY	*	*	*	*	*	*	*	*	*	*	TRACK FILE NAME SCROLL
	PLAY	*	*	*	*	*	*	*	*	*	*	TRACK "SONG TITLE" SCROLL
	PLAY	*	*	*	*	*	*	*	*	*	*	TRACK "PERFORMER" SCROLL
	PLAY	*	*	*	*	*	*	*	*	*	*	TRACK "ALBUM TITLE" SCROLL
	PLAY		1.		2	3.			3:	4	5	
	PAUSE		1.		2	3.			3:	4	5	TIME BLINKING
	SEARCH (GROUP)		2.			1.		–	–:	–	–	
	SEARCH (TRACK)		1.		2	4.		–	–:	–	–	
12	JPEG											
	STOP		1.			1.		S	T	O	P	
	PLAY		1.		2	3.		J	P	E	G	
	SEARCH		1.		2	3.		–	–:	–	–	

No.	Function	FL display										Note
13	PROGRAM											
	PROGRAM MODE			P	R	O	G	R	A	M		
	DISC INPUT (10key)	D	1.	–	–.		–	–	–:		–	Group # Blink, 10-key and ENTER key input
	GROUP INPUT	D	1.		1.		–	–	–:		–	Track # Blink, 10-key and ENTER key input
	TRACK INPUT	D	1.		1.				:		1	
	STOP	D	1.		1.				:		1	
	PLAY	–	–	–	–	–	–	–	–	–	–	DEPEND ON DISC TYPE
	FULL MEMORY				F	U	L	L				
14	RANDOM											
	RANDOM MODE			R	A	N	D	O	M			
	SEARCH	*	*	*		R	A	N	D	O	M	* : MOVING
	PLAY	–	–	–	–	–	–	–	–	–	–	DEPEND ON DISC TYPE
15	REPEAT											
	REPEAT 1 track	*	*		2.		1:	2	3:	4	5	CD/VCD case
	REPEAT 1 track		1.		2.	3.			3:	4	5	MP3/WMA case
	REPEAT 1 chapter		1.		2.		1:	2	3:	4	5	DVD case
	REPEAT 1 title		1.		2.		1:	2	3:	4	5	DVD case
	REPEAT 1 group		1.		2.	3.			3:	4	5	MP3/WMA case
	REPEAT 1 disc	–	–	–	–	–	–	–	–	–	–	DEPEND ON DISC TYPE
	REPEAT ALL	–	–	–	–	–	–	–	–	–	–	DEPEND ON DISC TYPE
	REPEAT A-B	–	–	–	–	–	–	–	–	–	–	DEPEND ON DISC TYPE
16	PROGRESSIVE											
	INTERLACE	I	N	T	E	R	L	A	C	E		
	PROGRESSIVE	P	R	O	G	R	E	S	S	I	V	
17	DEMO											
	DEMO START	D	E	M	O		S	T	A	R	T	
			W	E	L	C	O	M	E			
						T	V					
			M	P	3	J	P	C	A	Y		Random select from DVD/MP3/JPEG/WMA/CD
		D	I	S	C	1		L	L	A	Y	
		D	I	S	C			P	A	Y		
			W	M	A	2	P	L	L	A		Random select from DVD/MP3/JPEG/WMA/CD
		D	I	S	C			P	A	Y		
		D	I	S	C				L	A	Y	

No.	Function	FL display	Note
17	DEMO OFF BEEP BEEP ON BEEP OFF TRAY LOCK LOCK UNLOCK	DDDDDDFAR JIIIDIIMTMT3SCS.S.S.MS.S.MHDBBBUPSSCSSVSSSUUADDTLUUUWWAWWIYEEELNECCDCCDCCCNNTUUAHARPASSSOOXOONTMEEEOLG345EEAXXPNADOOSEEEOOOOOHOOPPCOPPPRRPHCLICPSRRRFFLFFLMNKCLPLPLP—EIOELUKIEEEEEOOOEKALALALFANNMC123RRVRRVAFNFDEYAYAYAMMIEEXFFFDYYYC12L10L	

No.	Function	FL display									Note
18	DVD TEST MODE										
	TEST START	T	E	S	T		*	*	#	@	By AC cord on with holding SET and ◀◀
	(Version info)										**: VERSION
											@: FE learning condition
											#: REGION
	A. EEPROM INITIALIZE	T	E	S	T		*	*	#	@	By pressing PAUSE (Front)
	(NORMAL)	T	E	S	T		*	*	#	@	0
	B. EEPROM INITIALIZE	T	E	S	T		*	*	#	@	By pressing and holding ▶▶ (Front) for 2-sec
	(FULL)	T	E	S	T		*	*	#	3	3
	① DEVICE KEY DISPLAY				*	*	*	*			By pressing MENU (Remote)
	② VERSION DISPLAY				a	a	a	a			By pressing MENU (Remote)
											aaaa: Syscon
	③ VERSION DISPLAY	b	b	b	b			c	c	c	c
											bbbb: Mechacon, cccc: Backend
	④ FL ALL ON										By pressing MENU (Remote)
	⑤ CHECK MODE			C	H	E	C	K			By pressing MENU (Remote)
	START PLAY			C	H	E	C	K			By pressing 1 (Remote)
	WOBBLE		*	*	*	*		*	*	*	*
	CD LASER current		*	*	*	*		*	*	*	*
	DVD LASER current		*	*	*	*		*	*	*	*
	DVD-SL jitter		*	*	*	*		*	*	*	*
	EEPROM (BWD)		*	*	*	*		*	*	*	*
	EEPROM (FWD)		*	*	*	*		*	*	*	*
	Temperature		*	*	*	*		*	*	*	*
	DVD-DL/SL jitter		*	*	*	*		*	*	*	*
	EEPROM initialize		F	F	F	F		F	F	F	F
	Monitor change		*	*	*	*		*	*	*	*
	STOP			C	H	E	C	K			By pressing STOP (Front or Remote)
	OPEN/CLOSE		–	–	–	–	–	–	–	–	–
	PLAY		*	*	*	*		*	*	*	*
	REGION CHANGE		C	H	A	N	G	E		O	K
	DEVICE KEY										
	WRITING MODE										By pressing ◀◀ (Front)
	WRITING										By DEVICE KEY (AV COMPULINK) JIG
	COMPLETE (OK)										Automatically power off

SECTION 5
TROUBLESHOOTING

This service manual does not describe TROUBLESHOOTING.

JVC
VICTOR COMPANY OF JAPAN, LIMITED
AV & MULTIMEDIA COMPANY AUDIO/VIDEO SYSTEMS CATEGORY 10-1,1chome,Ohwatari-machi,Maebashi-city,371-8543,Japan

(No.MB188)

Printed in Japan
WPC